# OCCUPATIONAL HAZARDS

JAN 16 1950

JANUARY 1950

*1950*

## PLANT MAINTENANCE SHOW ISSUE

# 4 dust control systems

**DESIGNED, FABRICATED and INSTALLED**

# by Kirk and Blum

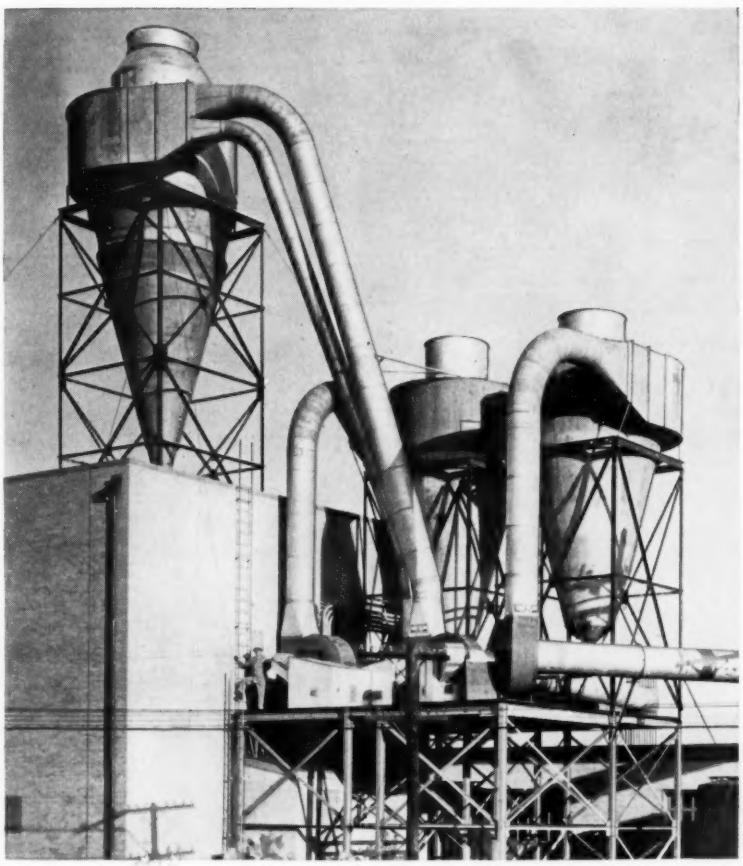
## Modern design makes production CLIMB for ladder manufacturer!

In the new and modern plant of the Rich Ladder and Mfg. Co., Cincinnati, four Kirk and Blum dust control systems of the streamlined tapered-main type serve the large woodworking machine area.

Many of the machines are special multiple gainers and multiple borers, for accurate and efficient production of the several types of wood ladders, ironing boards, etc., produced.

To increase safety and employee efficiency and to reduce fire hazards, all woodworking machinery is electrically interlocked with the Kirk & Blum Dust Control Systems.

This Kirk & Blum installation includes mechanical conveyors for the removal of fuel from the shavings and sawdust storage vault, and small fan units transporting fuel from the ends of the conveyors; then blowing into the boiler fire box at high velocity for efficient combustion in suspension, and automatic maintenance of uniform boiler pressure, adjustable for the varying requirements of summer and winter kiln and heating loads. The Kirk & Blum Mfg. Co., 2802 Spring Grove Ave., Cincinnati 25, Ohio.



FOR CLEAN AIR . . .

THE INVISIBLE TOOL **KIRK AND BLUM**

DUST CONTROL SYSTEMS

HD7260
.03

# DERMATITIS DOWN

## ...after using WEST LAN-O-KLEEN HAND CLEANSER ...with *Lanolinized* Corn Meal

Figures don't lie—and cold figures from plant after plant of every size confirm this fact: That WEST LAN-O-KLEEN is *more* than just a fast-acting powdered hand cleanser that washes away stubborn grit, grease and grime with remarkable ease and thoroughness. It's a *safety* measure that actually helps reduce industrial skin infections — thus lowering absenteeism and production costs to a notable degree. Like all sanitary products formulated exclusively by West, LAN-O-KLEEN possesses that "little something extra" that makes it *extra*-ordinary. It contains no harsh abrasives — no excess alkali to harm the skin. What's more—its fine corn meal base is impregnated with an *extra-generous amount of lanolin* — thus helping to combat the loss of natural skin oils.

## *Let Us Prove It Can Happen in YOUR Plant*

A trial test of WEST LAN-O-KLEEN will convince you that it should be standard equipment in your dermatitis prevention program. Write for a sample. With it you will also receive free a booklet telling how to use LAN-O-KLEEN — and how the LAN-O-KLEEN Dispenser can save you money.

**SEND FOR FREE SAMPLE**

**WEST DISINFECTING Company**

42-16 West Street,
Long Island City 1, N. Y.

**WEST DISINFECTING COMPANY**
**42-16 West Street, Long Island City 1, N. Y.**

Gentlemen:
Please send me a free sample carton of LAN-O-KLEEN.

Name_____ Position_____
Company_____
Address_____
City_____ State_____

14

# Electrical HAZARD SIGNS

## KNOCKED OUT by HY VOLT!

**WHEN Hy Volt** hits a man he stays hit . . . usually injured, often killed.

For while Electricity serves virtually every Industrial need, it is only with care and experience . . . and constant warning . . . that workers are taught to safeguard themselves against such accidents.

## STONEHOUSE SIGNS

### For Accident Prevention

help to educate, warn, safeguard those who work with and around Electrical equipment. Post them for greater safety.

**Many more Electrical Hazard signs are shown in our Catalog No. 8. It's free on request.**

Stonehouse SIGNS, INC. Stonehouse Bldg. · 9th at Larimer · Denver 4, Colorado

MANUFACTURERS

*"Stonehouse Signs Since 1863"*

**ACCIDENT PREVENTION SIGNS IN STANDARD COLORS AND DESIGNS**

OIL RESISTANT

## NEO CORD

The outstanding industrial sole. Stout cords combined with DuPont Neoprene form this sole that resists deterioration from oil, grease, acids and caustics. Its slip resistant quality lasts the entire long wear life of the sole.

## NEO CORK

IT'S NEW . . . IT'S SENSATIONAL! The successful blending of neoprene and cork makes this sole tops in long wear and slip resistance. Resists oil, grease, acids, caustics. Insulates the feet against heat or cold, and is shock absorbing.

***Mr. Safety Engineer, you can depend upon these soles to reduce accidents caused by slipping.***

## GRO CORK SOLES

Tough natural rubber impregnated with cork. Won't pick up metal chips, outwears leather, is waterproof, and insulates feet against heat or cold. Best for steel riggers, rock quarries, shipyards, foundries, creameries, and metal cutting departments.

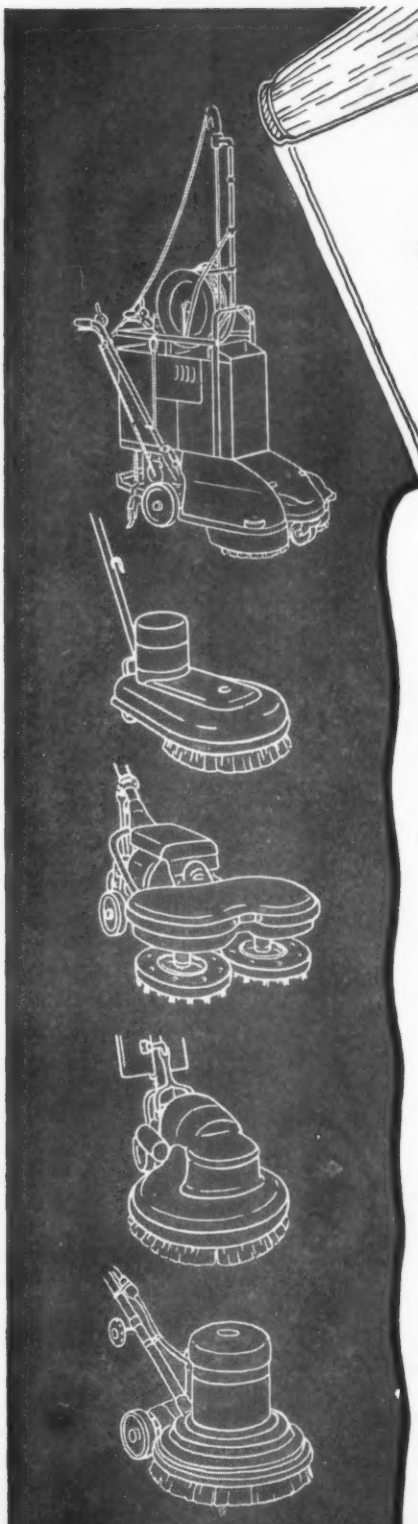
## TRADE GRO CORD MARK
## CORD-ON-END

Actual tests prove Gro-Cord Soles will outwear at least two leather soles. Cord-on-end construction with natural rubber makes these soles slip resistant, waterproof and comfortable. Ideal for yard men, constantly wet floors, loading docks, etc.

**GRO-CORD RUBBER CO., LIMA, OHIO**

*Canadian Plant*

**GRO-CORD RUBBER CO., TILLSONBURG, ONT.**



# WHAT *Management* SHOULD KNOW about FLOOR-MAINTENANCE MACHINES

The area of a floor, whether it is congested or open, the type of flooring and whether it is easy or hard to clean — these, among other factors, determine the floor-maintenance equipment. For most effectual, economical floor care, choose accordingly.

*For large-area floors,* a combination scrubber-vacuum is the labor-saving answer. *Finnell's 213-P* applies the cleanser, scrubs, rinses if required, and picks up. Has a cleaning capacity up to 8,750 sq. ft. per hour!

*For small-area floors,* a 13″ all-purpose machine, such as the *new 713 Finnell,* is a wise choice. This machine polishes, applies wax, wet- and dry-scrubs, light-sands, applies seal, steel-wools, and shampoos rugs! Yet it is priced incredibly low.

*For grease-caked floors,* a dry-scrubber with powerful scarifying brushes affords the fastest cleaning method. *Finnell's 84-XR,* with its self-sharpening brushes, cleans grease-caked floors in *one-tenth the time required when hand-spudding!*

*For general use, average duty,* substantial savings are effected with a *100 Series Finnell* — the machine that's *two sizes in one!*

*For general use, heavy duty, with emphasis on polishing needs,* choose a motor-weighted machine. An *800 Series Finnell* gives 8-way adaptability! . . . has *safety switch* on handle.

Because *Finnell* makes machines for every type of floor care — and in a wide range of sizes — you can depend on *Finnell* for unbiased advice as to the equipment that's *right* for your needs. For consultation, demonstration, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., *3501* East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

Everything for Floor Care FINNELL

**FINNELL SYSTEM, INC.**

*Pioneers and Specialists in*

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

VOLUME 12 • No. 3

# OCCUPATIONAL HAZARDS

"THERE'S PROFIT IN PREVENTION"

**IRVING B. HEXTER**
*President*

**LESTER P. AURBACH**
*Vice President*

**EDWIN M. JOSEPH**
*General Manager*

**JERRY CLOSE**
*Editor*

**N. N. GOODMAN**
*Associate Editor*

*Address all Communications to*

**OCCUPATIONAL HAZARDS**

1240 Ontario Street
Cleveland 13, Ohio
Phone: Tower 1-0264
Teletypewriter: CV-233

**SALES OFFICES**

CLEVELAND 13
1240 Ontario Street

NEW YORK 17
The Lincoln Bldg.
60 East 42nd Street

CHICAGO 1
64 E. Lake Street
Room 1013

LOS ANGELES 14
1250 Wilshire Boulevard
Room 403
FRED W. FRIESENFELDT

Published monthly by OCCUPATIONAL HAZARDS, INC., an affiliate of INDUSTRIAL PUBLISHING CO., publishers of APPLIED HYDRAULICS, DIE CASTINGS, FLOW, INDUSTRY & WELDING, COMMERCIAL REFRIGERATION AND AIR CONDITIONING and THE TAXICAB INDUSTRY. Member, Controlled Circulation Audit, Inc. Not responsible for unsolicited editorial material.
By SUBSCRIPTION, one year, $3.00.
Single copies, 30 cents.
Canada: One year, $4.00.
Foreign: One year, $5.00.

## CONTENTS FOR JANUARY 1950

Over The Editor's Shoulder ..... 8
Flammable Materials, A Plant Maintenance Problem.... 14
1950 Plant Maintenance Show ..... 16
The Life and Times of Careless Cal ..... 19
Engineered Dust Control Installations ..... 20
Carnival of Safety ..... 22
The National Fire Protection Association ..... 24
Oil and Grease Absorbents ..... 26
Industry News ..... 27
Literature Featured In Ads ..... 27
Right Off The Docket ..... 28
New Products ..... 33
Useful Literature ..... 37
And Sudden Injury ..... 38
Accidents In The News ..... 40
Technical File On Solvents ..... 41
Advertisers' Index ..... 48

# CESCO's NEW LIGHTWEIGHT COVERLITE

***WEIGHS LESS THAN 1 OUNCE***

***LOW IN COST BUT HIGH IN EYE PROTECTION***

● Even this negligible weight (only 97/100 of an ounce) is distributed evenly over the nose, brow and cheeks. No wonder workers wear the new COVERLITE with enthusiasm.

The sturdy injection-moulded, non-flammable frame provides full protection from impact, dust, flying sparks and chips. Good ventilation and ample air space prevent fogging. Large frontal area gives good range of vision in all directions. Easy-to-adjust elastic headband.

COVERLITE goggles can occupy an important place in your safety program. They are ideal for buffing, polishing, light assembly work and spot welding. Choice of clear, light green and dark transparent frames.

**the NEW COVERLITE goggle** can be worn over most standard types of personal glasses without interference.

***For complete information about CESCO'S newest safety goggles ask your CESCO distributor or write . . .***

**CHICAGO EYE SHIELD COMPANY**
**2308 Warren Boulevard • Chicago 12, Illinois**

**CESCO FOR SAFETY**

CESCO

**OFFICES IN:** Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Seattle, St. Louis, St. Paul, Toledo, Tulsa

*There's always something NEW at HY-TEST!*

# Resist-Oil Crepe Sole
## *Safety Oxford*

Put spring in their step and steel over their toes in this dress-type safety oxford. Its resist-oil sole makes it ideal for all jobs involving oil-spattered floors and pavements. Write for free catalog.

H714—Men's Burgundy moccasin blucher oxford, Resist-oil crepe sole and heel.

***Insure Workers' Feet in Sure Protection***

# HY-TEST ANCHOR FLANGE SAFETY SHOES

THE WORLD'S LARGEST SELLING SAFETY SHOE

HY-TEST DIV: INTERNATIONAL SHOE COMPANY • SAINT LOUIS 3, MISSOURI

New York Office—225 W. 34th St. • EASTERN OFFICE—Manchester, N. H.

HY-TEST SAFETY SHOES

OUT OUR WAY
OWOOH! FOR NINE YEARS HE'S BEEN STANDIN' ON SOL-SPEEDI-DRI AN' HE DON'T KNOW WHAT IT'S FOR!
BECAUSE IT'S NONE OF MY BUSINESS! THEY GOT MEN DOIN' THAT!
WHY IS IT SOME PEOPLE HAVE GOTTA BREAK A LEG OR ARM OR SUMPIN' BEFORE THEY BOTHER TO FIND OUT ABOUT SOL-SPEEDI-DRI?
THE HERMIT
J.R.WILLIAMS

**Promote Safety and Production**

**BY USING**

**SOL·SPEEDI·DRI**

Spread SOL-SPEEDI-DRI on the floor. It soaks up all liquids—oil and grease included. Shop floors are safe for working, safe for walking... and safe working conditions help speed production. SOL-SPEEDI-DRI cuts floor-cleaning costs and helps reduce fire hazards, too. Constant, thorough testing at our own laboratories assures you top quality in every bag. Clip the coupon, send it today... see for yourself what an important job SOL-SPEEDI-DRI can do for you!

**SPEEDI-DRI CORP.,** 1 WALL ST., NEW YORK 5, N.Y.

Warehouse stocks maintained in principal cities of the United States and Canada.

• • •

Inquirers in New York, New England and New Jersey should write to Speedi-Dri Corp. Elsewhere in U.S. to Waverly Petroleum Products Co., 1724 Chestnut St., Phila. 3, Pa.

**FREE SAMPLE:** Fill out the coupon and mail today for big, free sample.

Name _____

Address _____

City _____ State _____

**Do you have any questions, theories or ideas concerning industrial health or safety? If you want to give them a good airing—send 'em along. We'll publish all space permits.**

## And Sudden Injury

OCCUPATIONAL HAZARDS:

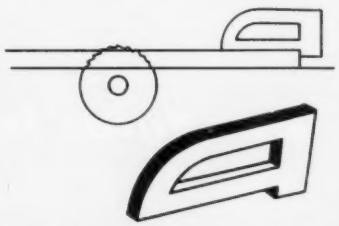
In two recent issues I have noticed the articles, And Sudden Injury which apply particularly to subjects we are emphasizing in our safety program. I am wondering if it would be possible to obtain reprints or tear sheets of these items for use on our 15 shop bulletin boards. The items in question appeared in the June and October, 1949, issues. If tear sheets or reprints are not available, may we have permission to photostat the illustrations?—Paul A. Dodge, Employee Relations Editor, Chain Belt Company of Milwaukee.

*We are more than happy to extend permission to make photostats of the And Sudden Injury series and are sorry that requests similar to this one have cleaned out our supply of tear sheets on these items.—Ed.*

## Pusher Sticks

OCCUPATIONAL HAZARDS:

On page 12, September issue, you show some safety guides in connection with woodworking shops and bring out the picture of the good old "pusher stick." I think there is a modern version of the "pusher stick" which is a far more satisfactory tool



in that it not only pushed the wood through the saw but holds it into position, as per attached sketch.—J. Willard Lord, The Atlantic Refining Co., Philadelphia, Pa.

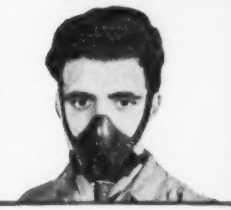
*(Please turn to page 10)*

SAFETY EQUIPMENT HEADQUARTERS
MSA
FOR EVERY INDUSTRY

# FOR PRODUCTION SAFETY IN HARMFUL ATMOSPHERES*

*with Protection, Comfort and Convenience!*

# AIR LINE RESPIRATORS

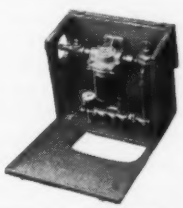


The famous Comfo Cushion Facepiece—standard for most requirements.

The All-Vision Facepiece—where protection for face and eyes is an added need.

M.S.A. Air Pressure Regulator—reduces high air line pressure to safe levels.

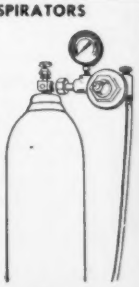
M.S.A. Air Line Filter—removes vapors, oil and scale from compressed air.



M.S.A. Portable Air Filter and Regulator; serves one to six respirators.

**M·S·A DEMAND AIR LINE RESPIRATORS**

Single Stage Demand Regulator permits economical use of air or oxygen from high pressure cylinders. Air flows to facepiece only during inhalation—standard 200 cu. ft. cylinder lasts 5 hours on average work.



For workers in atmospheres contaminated by welding and cutting fumes, paint spray, fumes from molten and burning metals, gas and vapors, and toxic dusts and mists. . . here is complete respiratory protection: easy to wear and simple to use wherever supplied air is available. Let us send you the details on M.S.A. Air Line Respirators and accessory equipment—*write for Bulletin CS-23!*

*Atmospheres not immediately dangerous to life.

# M.S.A.

## MINE SAFETY APPLIANCES COMPANY

BRADDOCK, THOMAS AND MEADE STREETS · PITTSBURGH 8, PA.

*At Your Service:*

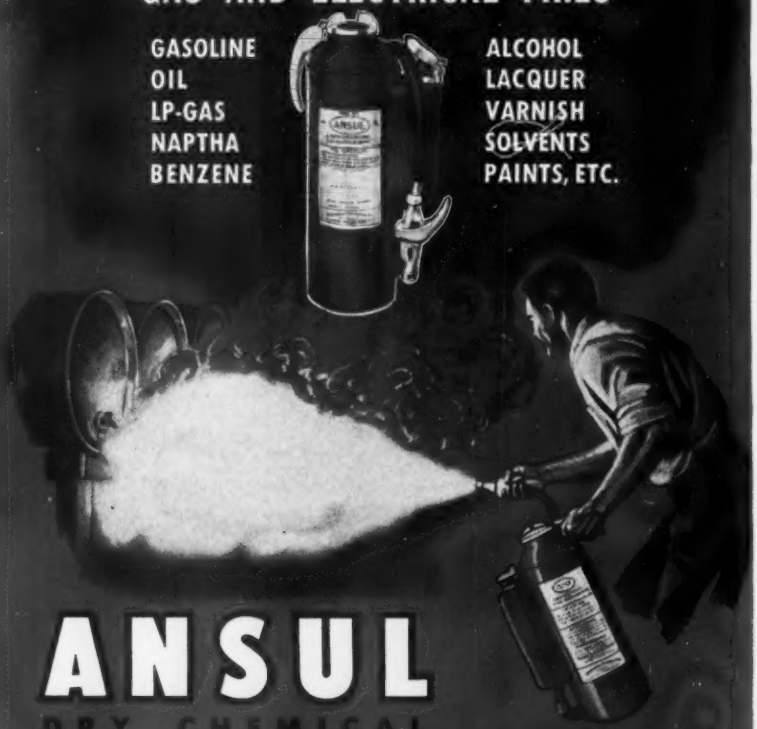
54 BRANCH OFFICES IN THE UNITED STATES AND CANADA

Your Best Protection

FOR FLAMMABLE LIQUID, GAS AND ELECTRICAL FIRES

GASOLINE
OIL
LP-GAS
NAPTHA
BENZENE

ALCOHOL
LACQUER
VARNISH
SOLVENTS
PAINTS, ETC.



ANSUL
DRY CHEMICAL
FIRE EXTINGUISHERS

They're most dependable too! Years of field service on all kinds of industrial applications has resulted in outstanding design features available ONLY in Ansul Dry Chemical Extinguishers.

FIRE PROTECTION by the dry chemical method has proved *Most Effective* as well as *Most Economical*. And only Ansul offers a complete line of hand, wheeled and stationary dry chemical fire extinguishers. Investigate Ansul Piped Systems for protection of special hazards.

Send for File No. 506. You will receive a variety of helpful printed matter. Included is our latest catalog which describes Ansul Extinguishers of all sizes — from the small Ansul Model 4 to Ansul Piped Systems and Ansul 2000 lb. Stationary Units.

ADVANTAGES

1. Quick, Positive Extinguishing Action.
2. Easier on the Spot Recharge (No special tools needed).
3. No Annual Recharge Necessary.
4. Low Maintenance Costs.
5. ANSUL PLUS-FIFTY Dry Chemical used Exclusively.
6. Long Range Stream.
7. Effective in Winds and Drafts.
8. Stream pattern forms heat shielding screen to protect operator.
9. Listed and Approved by Underwriters' Laboratories, Inc., and Factory Mutual Laboratories.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION, MARINETTE, WISCONSIN
DISTRIBUTORS IN PRINCIPAL CITIES IN THE UNITED STATES, CANADA, AND OTHER COUNTRIES


## LETTERS

### Smoke Recovery

OCCUPATIONAL HAZARDS:

In reading your October, 1949 issue, I discovered an article concerning electronic precipitation of smoke (Electronic Smoke-Recovery Apparatus, page 34.) Although this principle is well-known, I have been under the impression that its use would involve much greater expenditures than the $500 you mention.

Specifically, we are interested in some such device to give us smoke-free operation of our incinerator. We would appreciate your giving us any further details you may have on such installations or any leads to companies that produce this equipment.—William T. Witter, Asst. Proj. Engineer, Organic Chemicals Division, Monsanto Chemical Company.

OCCUPATIONAL HAZARDS:

We read with interest the article entitled Electronic Smoke-Recovery Apparatus in the October issue of Occupational Hazards. At the present time we are very interested in this type of smoke control, and would appreciate your advising us where we may obtain additional information on this subject.—Robert F. Heil, Baldwin-Hill Company.

OCCUPATIONAL HAZARDS:

Will you please advise where we may obtain more information regarding the electronic smoke recovery device described in October.—Harry B. Ashe, Director, Vermont State Department of Health.

*In answer to the queries of readers Witter, Heil, Ashe and many others, this article was prepared for us by Mr. S. M. Milanowski, Box 67, Station M, Los Angeles 32, California. He writes:*

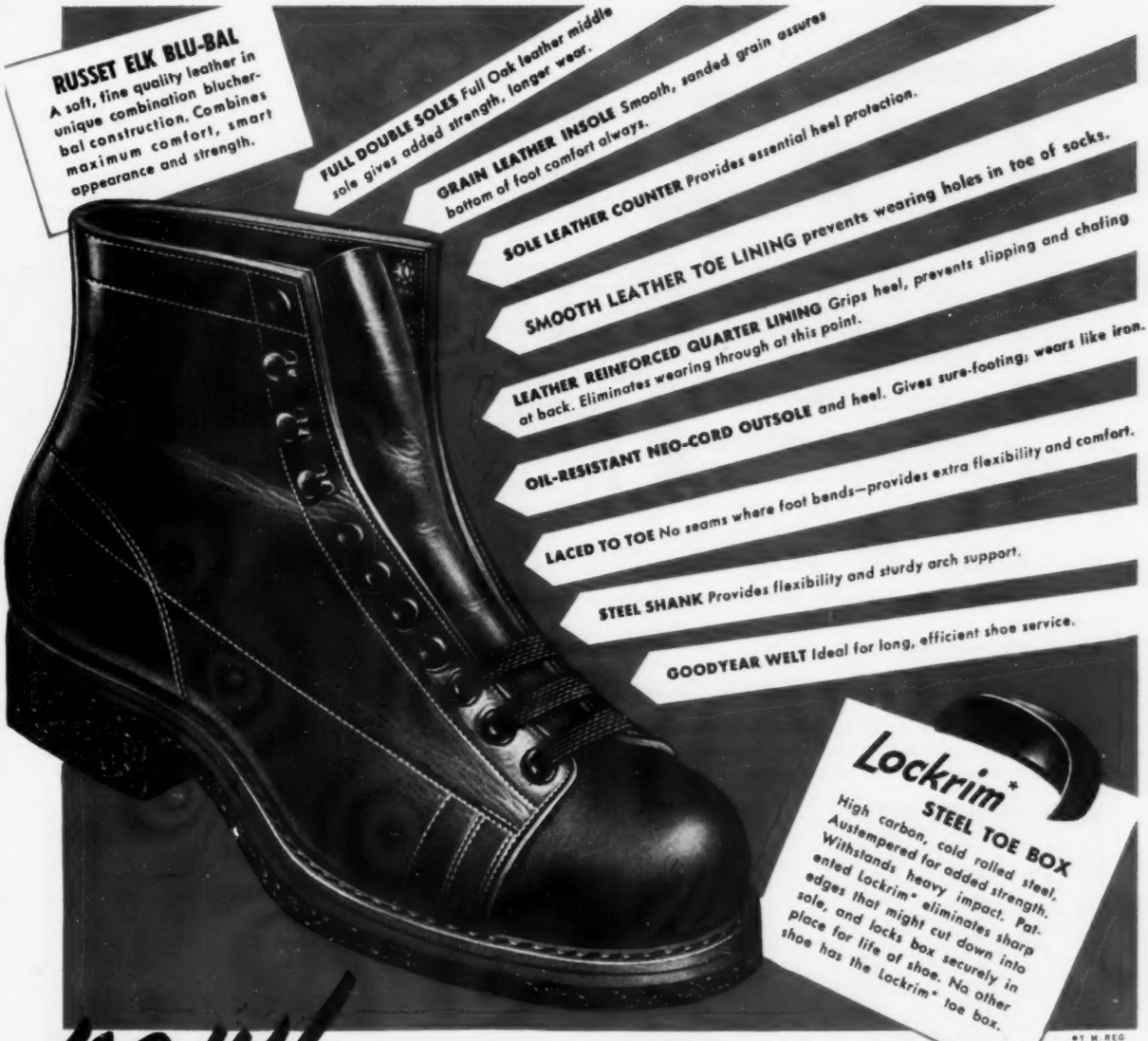
"Equipment of the type described in my article on smoke recovery comprises standard electronic tubes and parts — supplied by General Electric, Westinghouse, etc.—but it must be normally engineered to meet individual requirements. I would therefore advise your readers to discuss their smoke recovery problems with qualified electronic engineering consultants in their localities."—S. M. Milanowski.

### Systems

OCCUPATIONAL HAZARDS:

Isn't there an error on page 28 of September, Occupational Hazards? Shouldn't the word "systematic" used in the last sentence on the page, be "systemic" instead?—H. Somerfeld, San Francisco.

*Right! A systematic proofreading would have caught the error.—Ed.*


RUSSET ELK BLU-BAL
A soft, fine quality leather in unique combination blucher-bal construction. Combines maximum comfort, smart appearance and strength.
FULL DOUBLE SOLES Full Oak leather middle sole gives added strength, longer wear.
GRAIN LEATHER INSOLE Smooth, sanded grain assures bottom of foot comfort always.
SOLE LEATHER COUNTER Provides essential heel protection.
SMOOTH LEATHER TOE LINING prevents wearing holes in toe of socks.
LEATHER REINFORCED QUARTER LINING Grips heel, prevents slipping and chafing at back. Eliminates wearing through at this point.
OIL-RESISTANT NEO-CORD OUTSOLE and heel. Gives sure-footing; wears like iron.
LACED TO TOE No seams where foot bends—provides extra flexibility and comfort.
STEEL SHANK Provides flexibility and sturdy arch support.
GOODYEAR WELT Ideal for long, efficient shoe service.
Lockrim*
STEEL TOE BOX
High carbon, cold rolled steel, Austempered for added strength. Withstands heavy impact. Patented Lockrim* eliminates sharp edges that might cut down into sole, and locks box securely in place for life of shoe. No other shoe has the Lockrim* toe box.
AT M. REG

# new! LEHIGH'S ATHLETIC-TYPE SAFETY WORK SHOE

**Here is an important new kind of safety shoe construction. Designed like an athlete's shoe, it offers greater flexibility, comfort and safety for fast-moving, active feet. No seams to pinch or bind where the foot bends. Soft, lightweight, unlined upper reduces weight and clumsiness—gives plenty of rugged wear. Tough Neo-Cord sole resists oil-rot; provides positive traction on oily or slippery surfaces. And built into this easy-action work shoe is the famous Lehigh Lockrim* steel toe box. This new safety shoe does *double* duty on the job—actually helps *prevent* accidents because it's so light and limber . . . and protects feet and toes against injury. Send for a sample pair and prices today, or wire, phone or write to have a Lehigh representative call.**

MEDIUM LAST • **stock no. 1310**
Widths D and E, sizes 5 to 13.

**LEHIGH**
Division of the ENDICOTT JOHNSON CORPORATION
**SAFETY SHOE COMPANY**
**ALLENTOWN, PA.**

# day or night, at least twice daily.

**Bring your message to their attention quickly, forcefully, effectively, yet unobtrusively by using a**

## WAGNER CHANGEABLE COPY DISPLAY

**Here's a potent media for use in employee relations programs and safety promotion. The message of yesterday is easily changed in a few seconds to a freshly interesting message for today. Letters in a variety of sizes and colors are available in both translucent plastic or aluminum silhouette. The mounting frames may be simple or elaborate.**

The American Pulley Company
AMERICAN NEWS
ANNOUNCEMENTS
THINGS YOU SHOULD OR WOULD LIKE TO KNOW
APPEAR HERE FROM DAY TO DAY
SO GET THE HABIT WHEN YOU PASS BY
OF TURNING YOUR EYES THIS WAY

USE THE COUPON
TO OBTAIN
FURTHER DETAILS
AND CATALOG

**WAGNER SIGN SERVICE, INC.**

**357 S. Hoyne Ave., Chciago 12, Ill.**

Please send details and free catalog on Wagner Changeable Copy Displays.

NAME .....

FIRM .....

ADDRESS .....

CITY & STATE .....

## Plant managers report:

## formula SBS-50... new cleaner-sanitizer saves up to 50% of cleaning labor

## CHEMICAL ACTION DOES THE WORK

**The new SBS-50 Cleaner-Sanitizer, recently developed in the laboratories of The Sugar Beet Products Co., eliminates the guess work and labor of mixing expensive disinfectants with detergents at your plant. SBS-50 SANITIZES AS IT CLEANS! No rinsing is necessary . . . no rubbing or scrubbing is required. SBS-50 is the answer to your cleaning-sanitizing problems for toilets, sinks, showers, wash room floors, cafeterias, etc. It is guaranteed to reduce bacterial counts of casual contaminants to safe levels as judged by public health requirements. Convince yourself of this 50% saving in cleaning labor by writing for a free sample of the new Formula SBS-50 Cleaner-Sanitizer.**

**FORMULA SBS-11** Heavy Duty Skin Cleanser is used today in more than 10,000 industrial plants. Even most stubborn grime and grease disappear quickly, safely under the soil-penetrating action of the new SBS-11. Contains no added alkalis, no harmful mineral abrasives. It protects your skin's "acid mantle", nature's own bacteria barrier. In 5-lb. boxes, 10 boxes per case.

**TYPE R DISPENSER . . .** the finest dispenser for real washroom efficiency. Heavy gauge steel shell and mounting bracket chromium plated with a high luster durable finish. Economical "circle" dispensing, adjustable to five different amounts of soap. Drip shield prevents clogging caused by splashing. All working parts easily removable, permitting complete servicing without removal from mounting. Quantity discounts available.

*"The Washword of Industry"*

**SUGAR BEET PRODUCTS COMPANY • SAGINAW, MICHIGAN**

# FLAMMABLE MATERIALS—

## *a Plant Maintenance Problem*

AN IMPORTANT consideration to every safety engineer is the handling of flammable liquids, as one or more types of such material are to be found in almost all departments of any plant. Solvents, fuels, lubricants, paints and varnishes; all are threats to worker and shop safety. Correct storage and safe handling practices can prevent serious and costly accidents.

As a rule flammable liquids do not burn. It is the vapor from them which causes the trouble—burning and exploding with heavy losses to property and personnel. These vapors are present wherever certain types of liquid are stored, used or handled. Among the liquids in common industrial use which give off flammable vapors are gasoline, naphtha, benzine, benzol, toluol, xylol, banana oil, carbon disulphide, alcohols, ethers, and acetones, as well as light fuels, illuminants, mixtures used in cleaning and finishing processes. To play safe, any liquid which evaporates rapidly should be treated with the care given these recognized trouble makers, unless its components and behavior are definitely understood.

Vapors are truly hidden hazards—they are invisible and sometimes odorless. Because they can't be detected until it is too late, correct maintenance calls for steps to meet them almost anywhere in the plant. As most solvent vapors are heavier than air, they will flow to the lowest possible level. Vapors from open containers on upper floors will seek stairways, elevator shafts, air ducts, or any moving current of air. When practical, therefore, flammable liquids should be stored at the lowest possible level in order to localize any possible leakage.

More important than the place of storage is the method used. When mixed with air in varying proportions, depending on the nature of the specific liquid, vapors form powerful explosives; so, to store them safely, air must be excluded. The ideal way to do this is to keep large quantities of flammables in tanks buried outside the plant buildings. A working supply can then be pumped as needed from the main supply to auxiliary tank inside the plant without endangering the building by large quantity storage on the premises. Should it not be possible to use buried tanks, the main supply must be kept as far away from the building as is possible, depending on methods for pumping, etc., and should be well locked.

The flash point, the lowest temperature at which enough vapor is formed to make a flammable substance, varies among liquids. For instance, gasoline's flash point can be as low as minus 50 degrees F., benzine has a flash point of 12 degrees, while kerosene and fuel oils have flash points above 100 degrees. Many flash points are below normal room temperatures: the cooler the storage area, the better your fire and explosion insurance. Generally, a layer of vapor hovers over the surface of the liquid, regardless of temperature, and it will ignite if a flame or spark is carried near. The fire point, that temperature at which the liquid will continue to burn if once ignited, is usually slightly above the flash point.

The amount of vapor present is not a reliable measure of its potential danger, as its explosive force depends upon its proportional mixture to air. Explosive range—the percentage limit of air to vapor within which explosions can occur—varies for each liquid. Mixed in the correct proportions, very small amounts of solvents can explode with tremendous force.

When vapors exist under correct conditions, the slightest spark will produce a blaze or blast. Welding and cutting operations, defective electrical equipment and overburdened circuits, and countless other sources, many of which are practically unavoidable, make control of vapors at their source the only sure way of preventing flammable liquids from taking their toll.

Flammable liquids can be ignited by spontaneous combustion also. This happens when oxidation takes place and the heat generated is held. Unless the heat generated is produced more rapidly than it is dispersed, it cannot develop sufficiently to ignite. As oxidation requires contact with air, a large area of thinly spread liquid is more dangerous than the same volume in a smaller container. For this reason, the nearly empty tank is a constant threat: a small residue of liquid may

oxidize almost completely, forming a highly combustible gas.

Maintenance of clean floor and work areas is especially important in the prevention of flash fires which race from the point of ignition across oil spillage, exposed wastes and vapor pockets. Flammable vapors may travel several hundred feet, be ignited by a spark from a defective motor and burst into flame along its entire path of leakage almost instantaneously. Even in liquid state, they can often seep into areas where water cannot penetrate, awaiting the results of poor maintenance or carelessness to produce major fire losses.

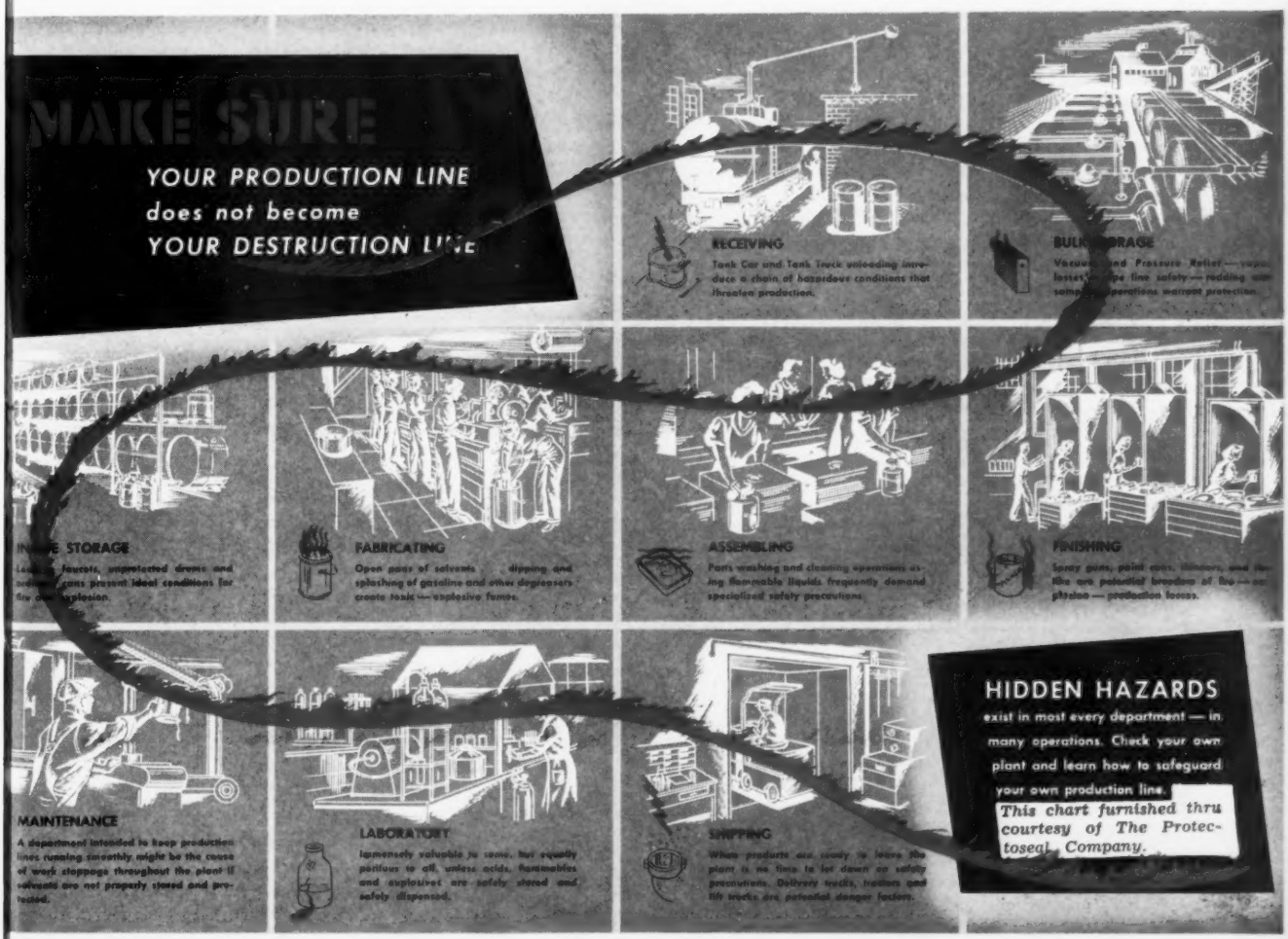
As can be seen from this discussion of their characteristics, flammable liquids can be handled with positive safety only by making sure that they are correctly stored in proper containers. For distribution and on-the-job storage of small supplies, cans with automatic closures are a must. Such cans prevent loss through evaporation, remove the element of chance in workers forgetting to tightly close solvent containers. Their pouring spouts stop waste when transferring liquid and reduce spilling loss. Some types contain valves which may be set to open at predetermined pressures, so that temperature changes do not produce breaks or leaks. Non-sparking metals are used in the openings and pouring nozzles.

Storage and distribution points should be flame proofed and equipped with self closing, well fitted doors; so that vapors cannot escape. Passage ways and chutes entering these rooms should have cut-offs to reduce drafts and provide no air currents to carry fumes into working areas. Such storage points should be kept scrupulously clean, free from all combustible materials.

Regulations governing smoking should be posted conspicuously and enforced to the letter. Workers should be provided with composition or rubber soled shoes and non-sparking tools. All incoming shipments should be checked for leaking containers and equipped with pressure relief valves before storage. Do not stack drums more than three high, if they are racked on their sides; more than two high if end to end. Lines, drums and storage racks should be properly grounded to forestall static electricity ignition. Of course, extinguishers and fire fighting equipment should be placed so as to be easily accessible.

Limit use of solvents and other flammables to as few areas as possible so that adequate protective measures can effectively be taken. Cleanliness and ventilation are the first considerations for these places. Forced air ventilation that carries fumes outside the building and

*(Please turn to page 48)*


MAKE SURE
YOUR PRODUCTION LINE
does not become
YOUR DESTRUCTION LINE
RECEIVING
Tank Car and Tank Truck unloading introduce a chain of hazardous conditions that threaten production.
BULK STORAGE
FABRICATING
Open pans of solvents . . . dipping and splashing of gasoline and other degreasers create toxic — explosive fumes.
ASSEMBLING
Parts washing and cleaning operations using flammable liquids frequently demand specialized safety precautions.
FINISHING
MAINTENANCE
A department intended to keep production lines running smoothly might be the cause of work stoppage throughout the plant if solvents are not properly stored and protected.
LABORATORY
Immensely valuable to some, but equally perilous to all, unless acids, flammables and explosives are safely stored and safely dispensed.
SHIPPING
HIDDEN HAZARDS
exist in most every department — in many operations. Check your own plant and learn how to safeguard your own production line.
This chart furnished thru courtesy of The Protectoseal Company.

## First of its Kind . . .

# 1950 PLANT MAINTENANCE SHOW

THE FIRST Plant Maintenance Show, devoted exclusively to methods and products for cost reduction through efficient installation, operation and upkeep, will be held in Cleveland's Public Auditorium, January 16 to 19 inclusive. In conjunction with the exposition, a four day conference on plant maintenance methods will be held, under the leadership of a fifteen man board of leading industrialists.

Co-sponsors of the show are the American Society of Mechanical Engineers and the Society for the Advancement of Management. Devoted exclusively to efficient management of factories, warehouses and other types of plants, the show will emphasize those aspects of operation which, though not a direct part of production, represent a large share of total production cost.

Major stress at both the show and the conference will be on cost reduction factors. Included in the equipment, materials and services to be exhibited are: air conditioning, heating, ventilating; buildings, building materials and services; safety training and employee relations; instruments, meters, gauges; lubricants and lubricating equipment; materials handling equipment; mechanical rubber goods; paints, painting and finishing equipment; power generation and distribution and power transmission; welding and cutting equipment.

This new departure in industrial exhibitions grants individual recognition to the importance of proper plant and equipment maintenance as a vital phase of economical operation. The place of the safety engineer in applying sound maintenance practices will be highlighted, enabling delegates to see and hear the most recent developments in building and equipment maintenance and their importance in securing safe production methods. Maintenance, considered only a few years ago to be a minor spare-time problem to be handled by several extra workers, has grown to become one of industry's biggest cost control factors. With the increase of mechanization, maintenance takes more and more of the production-distribution dollar. Reliable estimates place the maintenance cost of some highly mechanized industries—such as chemicals—at close to three-fourths of total factory payrolls. It is similarly high in all fields in which automatic equipment is used.

Leading the advisory board for the conference on maintenance methods will be L. C. Morrow, editor of Factory Management and Maintenance. The board includes: B. E. Boyd, Owens-Corning Fiberglas Corp.; W. F. Brannan, Anchor Post Products, Inc.; S. W. Corbin, General Electric Co.; L. P. Hanson, U.S. Air Conditioning Corp.; Carl C. Harrington, Mill and Factory Magazine; J. R. Hertzler, York Corp.; O. C. Hognander, G. H. Tennant Company; M. S. Ireys, The Carborundum Co.; J. F. Kidde, Walter Kidde & Co.; J. A. Meacham, Sherwin-Williams Co.; D. C. Miner, Houghton & Co.; D. G. Mitchell, Sylvania Electric Products, Inc.; C. F. Radley, Oakite Products, Inc.; A. A. Stambaugh, Standard Oil Co. of Ohio.

There will be no charge for either exhibit or conference attendance. So that readers who are planning to attend the exhibition and conference may schedule their activities, a program of the subjects to be discussed follows.

### PROGRAM

**MONDAY, JANUARY 16**
**10:00 A.M.-12:30 P.M.**

"Maintenance Organization and Management—Principles"
C. C. WINSTON, Senior Staff Engineer, Wallace Clark & Co., New York, N.Y.

"Maintenance Organization and Management—A Case from Manufacturing"
JOHN B. WHITLOCK, General Maintenance Engineer, ARMCO Steel Corp., Middletown, Ohio

"Maintenance Organization and Management—A Case from Transportation"

*(Please turn to page 46)*

# AO's Twin Cartridge RESPIRATOR

## For Organic Vapors, Gases, Dusts...

## Gives Double the Protection!

*Outstanding* . . . for the complete protection it provides and for the utter simplicity of its conversion into any of 7 types of respirators with one basic face piece. If you haven't as yet seen the NEW AO R5000 with new *interchangeable* cartridges and disc filter, be sure to ask your nearest AO Safety Products Representative for a demonstration of this highly serviceable equipment!

**QUICK FACTS — New Threaded Cartridges** — Wider, for lower breathing resistance. To interchange, merely unscrew one cartridge and screw in another for gas-tight seal.

**New Filter Retainer Assembly** — Takes either chemical cartridges or flat disc of chemically treated felt.

**New Face Piece** — Non-leaking, snug fitting, comfortable, of durable, pure rubber.

**Increased Visual Area** — New slender cartridge design and lower location of cartridge afford wider field of vision.

**New Flexible Fitting Brace** — Face piece adapts to features of wearer by slightest hand pressure on brace for perfect fit. Headband pressure cannot pull pliable rubber face piece out of shape.

**New Inhalation and Drain Valve Designs** — Provide positive action, thorough drainage and no interference by clothes or face.

**New Inventory Economy** — "7-respirators-in-1" permit standardization, hence smaller inventories. Double length headband permits "parking" of respirator around neck when not in use. Auxiliary filters available which extend cartridge filter life.

American Optical COMPANY
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

# *Surpassingly Great*

LION IN REPOSE
Antoine-Louis Barye
Pavillon de Flore,
Palais des Tuileries,
Paris

"This majestic bronze — a masterpiece — is Barye's most famous creation."[1] One of history's more prominent artists — "certainly one of its greatest sculptors — he has in his way no rivals."[2] Barye's superiority, like that of any great craftsman, is achievement due neither to good luck nor mischance but is the result of constant, patient and tireless effort to attain the greatest degree of excellence.

Outstanding merit in any field is rewarded by acceptance and appreciation that creates unrivalled leadership. Fortunately, among occupational skin cleansers, Pax Heavy Duty has enjoyed and held the preference of America's greatest companies for nearly a quarter century because of its inflexible adherence to the highest standards of quality and performance. For cleansing efficiency, safety, economy and every other desirable factor Pax Heavy Duty remains unsurpassed.

[1]Among Sculptures, by Charles Louis Borgmeyer
[2]French Art, by W. C. Brownell

PAX®

## PAX-LANO-SAV HEAVY DUTY
### GRANULATED SKIN CLEANSER

PAX-LANO-SAV* -a superior skin emollient combining lanolin and other special skin normalizers.

The Pax trademark symbolizes a deep-rooted tradition of superlative quality maintained through almost a quarter century of continuous research and development.

ADVERTISED IN AMERICAN MEDICAL ASSOCIATION PUBLICATIONS

**G. H. PACKWOOD MANUFACTURING CO. • 1545-55 TOWER GROVE AVE. • ST. LOUIS 10, MO.**

*Manufacturers of Fine Industrial Skin Cleansers*

*Tradename of G. H. Packwood Mfg. Co.

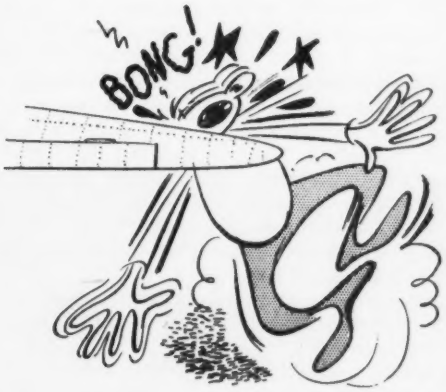
*In addition to PAX-LANO-SAV HEAVY DUTY, PAX also offers the following powdered or granulated quality skin cleansers: PAX CORN-TEX • PAX HYSPEED • DICTATOR SPECIAL PURPOSE • BORAPAX • SUPER-X • VELVAPAX LIGHT DUTY • OFFICE-PAX • PAX MECHANICS. Also available are PAX WATERLESS and PAX HECTO INK CLEANSING CREAM • PAX SKIN CLEANSER ECONOMIZER* DISPENSERS • and many other fine PAX Products. 50-A

# The life and times of Careless Cal

Portrait of the Author

**(CHAPTER 7—Conclusion)** Courtesy Southwest Airmotive Co.

*(By Al Harting, Public Relations Director, Southwest Airmotive Co.*
*Cartoonist, William Harper.)*




## FOR WHOM THE *Bells Toll*

*or*

*Give That Little Man A Cigar, Nurse*

Some guys come in on a prayer—I often come in on a wing.

Now there are two ways of looking at it. One with the eyes open. The other with the eyes closed. With the eyes open, you will probably see the wing. With them closed, you will see—well—ah—err—say Lana Turner in a cellophane kimona.

As a matter of fact, in the case pictured above, I saw all kinds of stars. In addition to Lana, there were Mars, Jupiter, Saturn, the Big and Little Dippers, and Joe Stalin mowing the lawn in a pair of red tights. Similar interesting sensations—which serve to take the mind off things—come as a result of running into propellers, airplane tails, doors and freight trains.

When work is slow around the shop, this sort of activity is especially valuable, since it necessitates the removal of head-shaped dents in sheet-metal, etc. It also brightens up the day at the hospital where they take you for X-rays and him-stitching.

## LET'S PLAY *Engine*

*or*

*How To Get Flat Feet In One Easy Lesson*

Being something of a boxer, I was sparring for an opening when something hit me and the lights went out. It didn't hurt much, though. It only contained an R-2800 engine (with accessories).

This incident dramatically proves the nobility of man. Granted that I could have called a couple of other characters in to help me. Why should I, Careless Cal, put those boys to all that trouble? There was one of them, Sidney B. Kidney, with a wife and nine kids at home, sitting over there brooding by the coke machine, not knowing when or where his next baby would appear. Then that other fellow, Herman Vanvermin, asleep up in the tire and tube bin, dreaming of inflation. Rather than jerk these jerks back to reality, I decided to unload the box by myself.

To be sure, I broke my ankle, tore the nails off eight of the toes on my right foot, and damaged my new yellow brogans almost beyond repair. But, shucks, that's all right. I've got lots of money. And lots of toes, too!

## For easier maintenance, more efficient and accurate plant operation, look to . . .

# ENGINEERED DUST C

THE ADVERSE effect of dust on the efficient operation of any plant is well known. Many dusts are markedly abrasive and, when mixed with oil or grease, make excellent grinding compounds. The effect of such mixtures on gears, bearings and shafting can be very serious and may cause excessive maintenance requirements.

Although some dusts have been shown to cause no chronic irritation of the respiratory tract, they do represent a distinct mental hazard to the worker who is constantly exposed to heavy concentrations. It is impossible for a man to wear clean clothes or to be clean himself in a plant covered and filled with dust. He soon gets the point of view that equipment that is allowed to look dirty and slovenly may be operated and maintained in the same way. He has no pride in his work, and the bills for lost time, upkeep and repair reflect this attitude.

If a plant is extremely dusty, it is reasonable to assume that a certain amount of the dust is going to settle on the surrounding property. If the plant is located in a thickly populated section, there is almost certain to be resentment and possibly litigation over alleged property damages resulting from this dust. Regardless of whether the damage actually exists and regardless of the outcome of the litigation, it is an unwholesome condition for any industrial firm when the neighbors object to its presence.

Another important consideration that may be frequently overlooked is the impression that the plant's appearance creates on any prospective customers when they inspect the operation. A thoroughly clean and neat plant is an indication of the conscientiousness of the operator and invariably it has a favorable influence on the customer.

Since most plant dusts have a certain monetary value, any of the material recovered can be re-used, thus effecting an appreciable saving. While this item is not important enough in itself to warrant the installation of dust control equipment, it does represent an added bonus for the far-sighted operator. It will at least pay for the operating cost of the equipment and, in some cases, may be sufficient to amortize the original investment over a period of time.

An effective dust control system consists of two essential elements: adequate hooding and efficient separation of the dust from the air.

The hooding should be designed to remove the dust at the source before it has had a chance to contaminate the working area and, at the same time, do this with the

**Here's how a concrete manufacturer solved his serious cement-dust problem. You might be able to use, or adapt, some of these dust control ideas to good advantage in your own plant.**

# S T CONTROL INSTALLATIONS

minimum amount of air consistent with sound operating conditions. The dust collector should be simple and trouble-free in operation and should remove enough of the dust so that the air can be discharged back into the building. This is particularly important in northern climates where the cost of heating the air may be an important factor during the winter months. 100% removal of the dust in the air is obviously impractical but the collector should be so efficient that no dust is visible in the effluent air.

**A Practical Application**

As a typical example of how the dust problem can be overcome, let's take a look at the new central-mix concrete plant of Kuert Concrete, Inc., in South Bend, Ind. This is a model 162 Plant built by the C. S. Johnson Co. of Champaign, Ill. and equipped with two 2 cu. yd. Smith mixers. It has a rated capacity of 120 cu. yd. of concrete per hour.

During the first few months of operation the dust situation proved to be a considerable nuisance and it was decided to install some sort of ventilating and dust collecting system in the plant. The collector installed in this instance was a cloth bag, filter type collector

*(Please turn to page 45)*

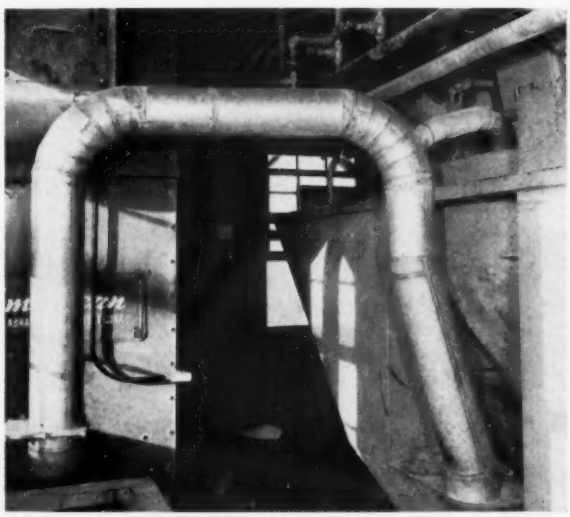


**Fig 1. Dust from the batching hopper and the cement weighing hopper to the Dust Collector. The piping is curved upward so as not to interfere with the walking area.**

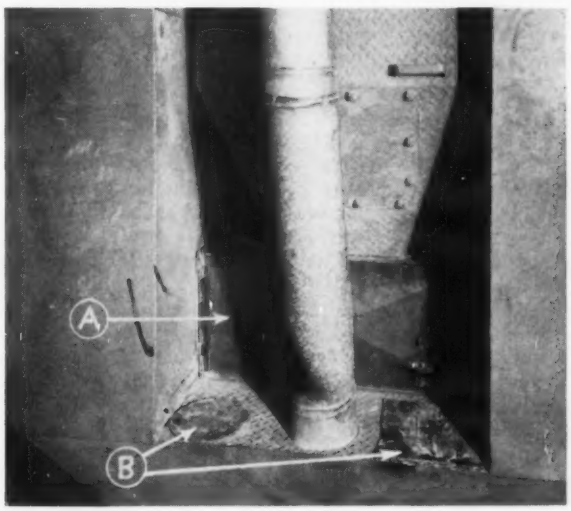



**Fig. 2. The front panel of the hooding marked "A" is removable for cleaning the interior of the hopper. Plates "B" cover access holes for punching down frozen aggregate or sand.**

**Display signs direct attention to nine contests in "Carnival of Safety" opening of The Hoover Company's three-month safety campaign. White elephants go to departments with worst safety record each month.**

## The Hoover Company mixed fun and cash prizes into nine contests and come up with their successful . . .

# CARNIVAL OF SAFETY

by
**L. D. HUMBERT, Safety Engineer**
**The Hoover Company**

SAFETY in the factory is a negative proposition. When nothing is happening, no one is being hurt, the safety engineer is doing his best job. But when nothing is happening, it is difficult to keep people safety-conscious. They tend to become less careful and then come the accidents.

This is why the job of the industrial safety engineer is a challenging one, a job that keeps him on his toes perpetually. He is always trying to work himself out of a job by eliminating all hazards and by eliminating all accidents.

Every so often it seems advisable to forge a gigantic needle to inject a dose of safety enthusiasm into all departments in the plant.

That is what was done at The Hoover Company plant in North Canton, Ohio, the early part of this year in a three-months' safety campaign that cut our accident record by almost nine-tenths.

As far back as safety records had been maintained by The Hoover Company, the plant had never gone thirty consecutive days without a lost-time injury. In 1947 and 1948 there was an average of nine lost-time injuries per month. Lost-time injury frequency rates ranged from 0 to 190.6 in various departments in the reference period, September, October and November, 1948. The plant-wide average was 18.50 as against an average of 14.1 for the electrical appliance industry for the entire United States during 1948.

An urge to improve this safety record prompted assistant vice president, L. E. Connelly, to suggest that plans be drawn up for an intensive safety campaign. The Safety Drive idea was discussed and approved by the Board of Directors and by the Works Committee. A budget of $7,500, including $5,000 in prizes, was approved for this three-months' effort.

J. W. Powell, personnel manager, and C. W. Traut, vocational training director, worked with the safety department in planning the details of the Carnival of Safety and setting up the mechanics of the various contests and the training of all hands to put the campaign into operation.

By combining fun and the possibility of direct finan-

**Safety training for the supervisory staff of The Hoover Company is a year-around activity. Here is shown a class in the vocational training department engaged in a discussion of safety in the plant.**

cial gain for every man and woman in our working force of 1860, nine separate contests were set up to give everyone a financial stake in the plant-wide effort.

An intensive training program was set up where groups of twelve spent ten hours in formal classes. All full supervisors with hourly rated employees under them, assistant foremen, foremen, general foremen and plant superintendents, numbering more than 130 men and women, attended these classes. Here they received training to increase their safety consciousness and to enable them to spot and correct safety hazards.

The plant publication, first line of employee communications, announced the opening of the campaign in a big "Carnival of Safety" issue with full details of the three-months' drive.

From this first announcement of the safety campaign on through to the end of the drive, enthusiasm ran high throughout the plant. The carnival touch was injected into this announcement issue particularly around the "goat" award and the White Elephant which was earned by the department having the worst safety record each month.

This White Elephant award has been carried on as a regular monthly feature at The Hoover Company and has had an important influence on improving our safety record.

There were also "Safety Oscars", attractive trophies, awarded each month to the department which made the greatest percentage of reduction in its lost-time frequency rate. This also is being carried on as a regular safety incentive feature of our continuing safety program.

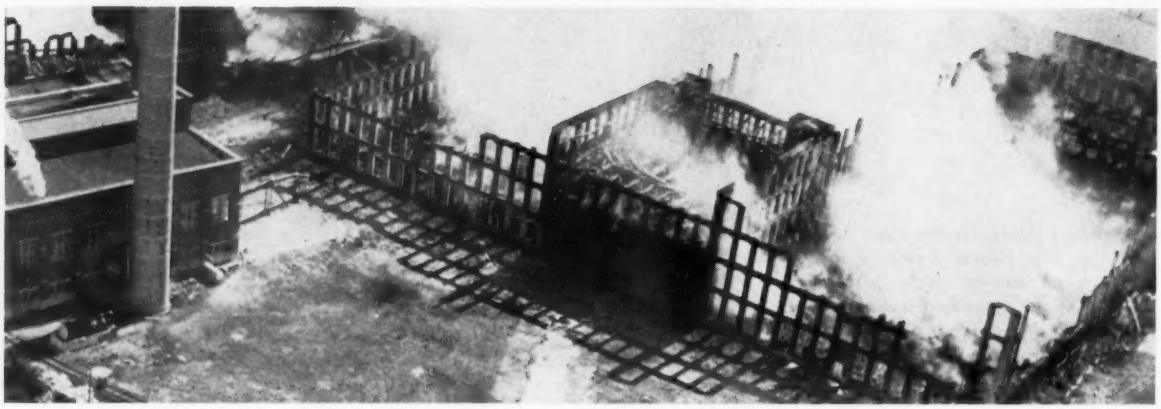
Each issue of the plant publication throughout the year carries considerable safety news.

The carry-over influence of the Carnival of Safety has improved the plant's safety record throughout each month of this year. For example, the lost-time injuries through July 31 decreased from 57 in 1948 to 22 in 1949 for the same period, a reduction of 61.5 per cent.

Each month the Safety Honor Roll is published in the plant publication and posted on bulletin boards throughout the plant. It takes 100 days without a disabling injury for a department to win a place on this honor roll.

*(Please turn to page 44)*

**C. W. Traut, vocational training manager of The Hoover Company, believes in the theory of teaching-by-doing. Here he is shown in a demonstration before a class.**



**Protect your plant from fire. Take advantage of the country's number one clearing house for information on fire protection and prevention. It's called . . .**

# THE NATIONAL FIRE PROTECTION ASSOCIATION

AMERICAN industry is facing a considerable threat from needless fire. The year 1948 had the worst fire record in U. S. and Canadian history—never before has North America suffered so many fires above the $250,000 mark. The trend has been consistently "up" since the NFPA initiated this annual study of large fire losses in 1931 but has been particularly alarming in the past three years. In 1946 there were 187 major fires; in 1947, 202; and last year, 268. The total estimated dollar loss from 1948's 268 fires is $141,497,000, about 18% of the estimated aggregate fire loss in the United States and Canada ($800,000,000). It may be safely estimated, at the same time, that these 268 fires which caused just less than one-fifth the total fire loss represent only about four hundredths of one percent of the total number of fires that occurred. Thus, by concentrating on these major fires we can achieve maximum results in terms of fire waste reduction.

The manufacturing group was largest in number (92) and in dollar loss ($49,967,500), and second in fatalities (61 persons). There were 13 fires in manufacturing plants causing individual losses of $1,000,000 or more.

The National Fire Protection Association is working very closely with industry to help them improve their fire defenses. Most big industry has very complete fire defenses, but it's the medium or smaller-sized firms that need to do much more along the lines of fire prevention and fire protection.

The NFPA maintains that at least 90% of all fires can be prevented. It is not by mere good luck that many firms, engaged in even the most hazardous of operations, have enjoyed an immunity from serious fires for a considerable time. Usually firms with good fire records have faithfully followed the proven fire safety practices embodied in the standards and publications which come automatically as part of NFPA membership.

Now this doesn't mean that membership in the NFPA will give you a charmed existence as far as fire is concerned, but it *does* mean that knowledge obtained through the medium of NFPA publications and contact with NFPA experts will give you a clearer picture of how fire can cripple your operation. And it *does* mean that if the standards of the NFPA are faithfully followed that most of the fires that can destroy your business can be prevented.

The NFPA is the clearing house for information that is authoritative on the subject of fire protection and fire prevention. The Association has been in existence for nearly 54 years. The Association has two functions: one, to provide standards under the guidance of which fire waste may be checked; the other, to educate the public so that the loss of life and injury from fire will be reduced and the needless fire destruction will be halted. The Association is non-commercial and non-profit and has no "axe to grind" save these two objectives.

The standards of the Association, which represent about every safeguard for most manufacturing operations against fire, are prepared by impartial committees, consisting of representatives of national organizations which make up NFPA membership, U. S. and Canadian governmental departments, and other cooperating bodies. The standards assure reasonable safety without undue

expense or inconvenience. Widely used by state, provincial and municipal governments as the basis of legislation, also as the basis of insurance requirements and as a guide by the increasing number of property owners demanding a maximum of fire safety, the standards receive constant revision to keep them in step with progress in science, invention and the industrial arts.

The Association's technical committee members (and there are 60 odd technical committees) are expert fire prevention engineers who serve without pay. Indeed it can be said that never has as much public effort—of expert thought and painstaking technical investigation—been given freely for so long a period as has been devoted to the work of the National Fire Protection Association.

Impartial estimates show that the value of publications distributed to NFPA members alone is worth twice the associate membership fee of $12.50. Any individual or organization interested in the protection of life and property from needless fire may join. Membership in the Association does not pledge a member to any course of action, but it does offer practically the only way to keep automatically abreast of the new industrial hazards and new methods of fire control as they occur.

A fuller description of the activities of the Association and a current list of more than 300 publications on fire control is available to any reader of OCCUPATIONAL HAZARDS without obligation. Just request THE STORY OF THE NATIONAL FIRE PROTECTION ASSOCIATION and it will be promptly sent to you.

A well-known engineer made this statement recently: "Indeed it is no exaggeration to say that the work of the NFPA has been a potent force in industrial growth. Any industry producing products which involve the use of materials and processes possessing inherent hazards can only grow and prosper if such hazards are properly safeguarded and related municipal or state legislation is not unduly restrictive. This is the field in which the NFPA works for industry.

**Application for Associate Membership in the**

**NATIONAL FIRE PROTECTION ASSOCIATION**

INTERNATIONAL

EXECUTIVE OFFICE: 60 BATTERYMARCH STREET • BOSTON 10, MASSACHUSETTS

Name _____ Date _____

(Associate membership is open to any individual, corporation, firm, public or private organization interested in the protection of life and property from loss by fire.)

Address _____

(If application is for an individual, please show on line below your occupation and/or business connection.)

_____

hereby requests enrollment as an Associate Member with the understanding that the $12.50 annual dues provides membership for twelve months from date of election, without initiation fee or other assessments, and for immediate receipt of all publications to which members are entitled. This includes the Quarterly Magazine, five dollars of the $12.50 annual dues being for a year's subscription thereto.

☐ I enclose $12.50. ☐ Please send bill for dues.

AA 27200

**NFPA application blank for associate membership in that organization. OH readers are invited to tear out and use this form.**

**A few of many types — Plastic, Natural Rubber and NEOX coatings**

1. Extra heavy duty NEOX-coated glove with 14" gauntlet that turns up to prevent drip. (Redmont).
2. Flexible weight NEOX-coated with knit wrist (Edmont) Also, very flexible plastic-coated gloves (Liquid-Proof).
3. Very flexible, sure grip, rough-surfaced natural rubber, coated all over or with ventilated fabric back (Grab-it).

*Order from your safety equipment or industrial supplier*

**cut their glove costs 65% and got better hand protection**

CASE No. 194

Recommended Edmont Glove — Glove Formerly Used

Note comparative wear after same number of hours on same workman's hands — Full report on request.

We can show you records of many on-the-job tests, in a great number of operations, where workmen wore out 3 to 9 ordinary gloves while wearing one Edmont coated-fabric glove of the type we recommended on their other hand. Conditions included abrasive and/or sharp cutting materials, with and without the presence of oil, grease, various acids, caustics, solvents, degreasants and heat.

**FREE TEST OFFER:** Simply send us, on your letterhead, a brief statement of your operation, materials handled and temperature conditions. We will forward, for on-the-job test and report, the type gloves we recommend—coated either over-all or palm and thumb only with NEOX (neoprene and plastic), natural rubber, or plasticized vinyl, depending on your service conditions. All types are fabric-lined, making them snag-proof, comfortable and easy to slip on and off.

**Edmont** Manufacturing Company
514 Orange St., Coshocton, Ohio

World's largest manufacturers of coated industrial gloves.

## Make Plant Maintenance Easy—Use . . .

# OIL & GREASE ABSORBENTS

THE OLD FASHIONED machine shops and fabricating plants which, though they seem as long gone as the horse and wagon, are only a few years in the past, were difficult places to work in. Machinery was poorly grouped, lighting was inadequate, stock was piled haphazardly, and the entire working area swam in oil drippings, grease, solvents, water and waste. From both production and safety viewpoints, manufacturing was a costly process. A major part of the forward strides made during and since the war years in the *increased attention and improved methods of plaint maintenance that enables faster, safer, more economical production.* Clean areas are safe working places: they are cheaper to produce in, and they get the best efforts from men and equipment.

Still remaining, however, in many—usually small—plans is the mark of slovenly plant maintenance methods: Oily, greasy floors. Number one on the list of personal accident hazards is falling—on stairways, over unseen obstacles, or just slipping on level surfaces. Surprising though it may seem, level surfaces, not perilous ladders or staircases, claim by far the largest number of industrial fall victims. Open, flat areas, though apparently harmless, actually are deceptively dangerous: workers take special precautions when climbing or descending stairs and using catwalks and ramps; but the level floor, which seems perfectly safe, workers find their greatest fall hazards.

Clean floors automatically eliminate one of the major contributing factors to the high frequency of falling accidents. It is obvious that poorly maintained floors constitute a danger to all employees—from stock boy to plant superintendent—and this condition proves costly to management in medical expenses, lost man-hours and production, increased insurance premiums.

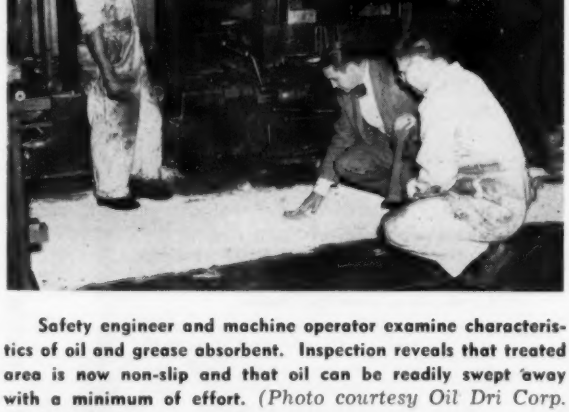
Time studies have shown that clean floors are an important factor in maintaining high production rates. The greasy floors which characterize old fashioned plants force workers to walk slowly for fear of falling, especially if they are carrying objects in their arms. Movement from one area to another is gingerly and insecure. This constant tension keeps men on edge, saps working efficiency, tires them, dulls incentive.

From the standpoint of worker morale, a clean shop floor produces higher output. Dirty working conditions, especially when employees must work in greasy and oily areas for extended periods, are depressing and cause widespread grumbling, as well as costly labor turnover and sloppy, careless work.

To prevent unsafe, dollar consuming floor conditions, researchers developed the first industrially adaptable granular type oil and grease absorbents about ten years ago. They have been developed to the point where they will remove the danger of nearly any kind of oil, grease, water or slick which may collect on floors. These absorbents are available under various trade names. They have high capillary attraction for oil, grease, water, kerosene, acids and other liquids or semi-liquids. They will pick up and hold their own weight of such contaminants. By removing these under-foot dangers from a free state, the absorbents make them easily removable.

Commonly spread around machines to catch oil drippings and provide firm, comfortable footing; in entrances,

*(Please turn to page 43)*



**Safety engineer and machine operator examine characteristics of oil and grease absorbent. Inspection reveals that treated area is now non-slip and that oil can be readily swept away with a minimum of effort.** *(Photo courtesy Oil Dri Corp. of America).*

# INDUSTRY News

## Deike Honored By MSA . . .

George H. Deike, president and co-founder of Mine Safety Appliances Company, Pittsburgh, was one of 342 veteran employees of the firm

honored at a recent service award banquet. Mr. Deike has completed the maximum 35 years' service to the company which he helped organize in 1914. John T. Ryan, Jr., MSA executive vice president and son of Mr. Deike's original partner, is shown presenting the award to him. Others in the picture are three employees who have completed 30 years' service. They are, from left to right: J. B. Davies, industrial sales manager; Mr. Deike; Mr. Ryan; S. D. Price, chemist; C. A. Wedge, plant engineer.

## Gro-Cord Trailer Speeds Service . . .

Gro-Cord Rubber Company, Lima, Ohio has placed a tractor-trailer in service in order to speed delivery when needed and cut costs to its customers. The new truck and 28 foot trailer can be loaded with 15,000 pairs of soles and heels, and be on its way to the manufacturer within a short time after an order is received.

The merchandise will arrive at the user's loading dock without having been transferred to other vehicles in transit, in A-1 condition, without chance of shipments going astray. The service has proved so popular that Gro-Cord anticipates adding two more similar units.

## Safety Courses at N.Y.U. . . .

The spring term of New York University's Center for Safety Education will begin February 6, offering a full curriculum of courses in industrial safety training. For students seeking a certificate in the field, or simply interested in improving their education in spot phases of the field, the following courses will be given: Qualifications, Duties and Responsibilities of Safety Directors and Safety Engineers; Safety Organizations; Values and Limitations; Supervision in Accident Prevention. Required courses for certificate seekers include: Industrial Hygiene and Occupational Diseases; Fire Prevention and Protection Inspection.

## Fire Film

"Emulsion Extinguishment of Oil Fires With Water Sprays" is fully demonstrated with spectacular fires in full color, and a running commentary with explanation of how and why it works in scenes photographed through the microscope for a 16 mm., *sound*, Kodachrome film announced for distribution by Grinnell Company, Inc. of Providence, R. I.

Available for free showing before engineering groups, schools, fire protection organizations, fire departments, oil refinery executives, electrical and power utilities, etc., the film presents for the first time a complete summary of the results of fifteen years of pioneering and successful accomplishment in putting out oil fires with water. The method gives protection against flash-back of fires in medium and heavy oils and quick extinguishment of fires in the light oils including kerosene.

The film runs approximately 20 minutes at sound speed and showings may be scheduled for groups having 16 mm. sound projectors by writing to General Sales Manager's Office, Attention: K. P. Jones, Grinnell Company, Inc., Providence 1, R. I.

## LITERATURE FEATURED IN ADS THIS MONTH

**The publications listed below are available to readers without charge. Simply circle on the postcard provided in this issue the number of items you wish to receive,** and send it to OCCUPATIONAL HAZARDS, 1240 Ontario **Street, Cleveland 13, Ohio. Your request will then be forwarded directly to the companies concerned.**

**A-1** . . . A free sample of Lan-O-Kleen, lanolized hand cleanser, plus a booklet on saving money with the product, is offered by West Disinfecting Co.

**A-2** . . . Stonehouse Signs, Inc. offers a complete list of electrical hazard and other safety signs in catalog No. 8.

**A-3** . . . Information on safe, economical maintenance of all types of floors is available from Finnell System, Inc.

**A-4** . . . Chicago Eye Shield Co. offers information on its new lightweight Coverlite goggles which weigh less than one ounce.

**A-5** . . . Speedi-Dri Corp. offers a generous free sample of its oil and grease absorbent, Sol-Speedi-Dri.

**A-6** . . . Bulletin CS-23 describes Mine Safety Appliances Company's air line respirators and accessory equipment.

**A-7** . . . Ansul Chemical Company provides a complete file, No. 506, on its fire fighting equipment. Included are models from small portable units to large stationary plants.

**A-8** . . . How Mr. Higby Learned About Floor Safety The Hard Way explains the importance and expense of slippery floors. It is available from W. G. Legge Co.

**A-9** . . . Jackson Products will provide complete information on its line of Headrest goggles, available for all forms of work requiring eye protection.

**A-10** . . . The facts about Scott Aviation Corp.'s demand inhalators and Air-Pak safety breathing equipment are available from the company.

**A-11** . . . A folder describing the Detex Guardsman is offered by the Detex Watchclock Company.

**A-12** . . . Dockson Corporation will provide a complete catalog of its head and eye protective equipment.

**A-13** . . . An informative catalog on Pioneer Rubber Company's Stanziol gloves, which permit safe handling of oily objects is offered by the manufacturer.

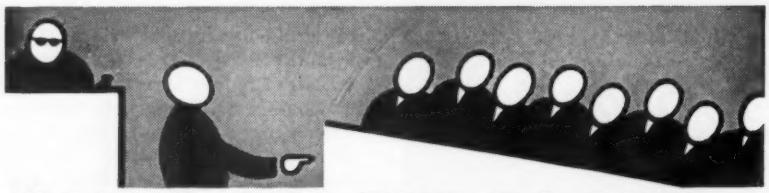
**A-14** . . . Who's Watching Your Watchman Tonight? is the title of a folder offered by Chicago Watchclock Division, describing the company's watchclock system.

**A-15** . . . Safety signs for all purposes are shown in Standard Signs, Inc.'s new catalog, available on request.

**A-16** . . . Samples and literature on Dionol ointment for burns and slow healing wounds are available from Dionol Pharmacal Co.

**A-17** . . . Bulletin M-10B, offered by Industrial Products Co. describes its safety pouches for wear by linemen.

**A-18** . . . Bausch & Lomb's catalog describes the complete line of industrial eyewear and gives information on the theory and design of eye protection.



# RIGHT OFF THE DOCKET

### Silicosis Exposure Before Passage of Compensation Law

ELLISON had worked for the employer as a stone cutter for 29 years prior to his disablement and had been subjected to the hazards of the disease of silicosis, at least up until a few months prior to his disablement and until a time before the effective date of the occupational disease statute, May 1st, 1946.

Prior to that time, company had equipped its plant with apparatus to remove or reduce the amount of dust in the air in the plant caused by its operations, and this apparatus reduced the dust to allowable minimums, and to the point where the exposure to the hazards of the disease in the employer's plant was no more than normally encountered in everyday life.

For about 18 months after the effective date of the statute, claimant continued to work in the employer's plant until he was laid off on November 5th, 1947.

Under the provisions of the occupational disease law, an employer is not liable for compensation where the last injurious exposure to the hazards of a disease occurred prior to the effective date of the act; and the employer would not be held liable for compensation unless such disease arose out of and in the course of employment and had resulted from the nature of the employment in which the employee was engaged under such employer.

By nature of employment is meant that to the occupation in which the employee was so engaged, there is attached the particular hazard of such disease that distinguishes it from the usual run of occupations and is in excess of the hazards of such disease attending employment in general.

Since the facts related indicated that the employer utilized apparatus in the plant which reduced the dust content in the air in the plant to no more than that encountered in the normal life of an individual walking out on the street, or of one working in a soda fountain or drug store, it follows that the last injurious exposure of the claimant to the hazard of the disease must have occurred prior to the effective date of the act.

Accordingly, there could be no recovery.

American Mutual Liability Insurance Co., et al vs. Ellison, Ct. of Appeals of Georgia. Sept. 23, 1949, 55 Southeastern, Second, Page 258

### Injured on Personal and Business Errand

THE CLAIMANT was employed by an association to perform services of a varied nature, under the direction and control of its president. During the summer season he worked full time; during the winter season, he was strictly on call.

At the time of the accident, January 30, 1947, he was working and being paid on winter-time basis. On the evening before the accident, he was called by the president of the association and received instructions relative to some work to be done. Before leaving home, the claimant's wife requested him to purchase some lard and yeast, "if he had time".

He slipped and fell on an icy street and sustained head injuries before he reached the company's office. After having complied with instructions given to him by the president, before returning to the president's office; he did stop at the grocery store to purchase the items requested by his wife.

Two questions arise. First, whether or not the employee who is accidentally injured on the public street while he is on a special errand for his employer is covered by the Compensation Act. This question was answered in the affirmative. Second, whether or not the fact that the employee purchased groceries for his wife and for himself while on the special errand for his employer, brings him within the provisions of the Compensation Act for which he would be entitled to a recovery?

When the employment makes travel necessary and an accident arises while traveling on a public street or highway, such accident is deemed to arise out of and in the course of employment.

It is not necessary that the sole purpose for such travel is to serve the employer's purpose, but it must be the dominant one; the one that necessitated such travel. The test is whether the employee's work necessitated the travel. If it did, the employee is in the course of the employment, even though he is serving at the same time some purpose of his own.

It is plain that the employee's reason for going downtown was a special errand for his employer; that purpose necessitated his travel. After he had determined to travel for his employer's purposes, the matter of purchasing the groceries was an incident thereof; as his wife asked him to make them "if he had time".

The injuries were deemed to have arisen out of and in the course of employment and the employee was entitled to recover for injuries sustained.

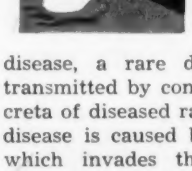
Oestreich vs. Lakeside Cemetery Association, 38 Northwestern Reporter, Second Series, Page 193, Supreme Ct. of Minn., July 8, 1949

### Fatal Disease Carried By Rats

DELLA ROSE seeks to recover compensation for the death of her husband, Walter W. Rose, deceased.

At the time of the decedent's death, he was 60 years of age and was employed as a laborer by the Chicago Sewage Department, where he had worked for 19 years. During this time he enjoyed good health.

His duties involved cleaning out the sewers, making up mortar for brick layers, digging out caved in sewers and filling in the excavations after repairs were made.



On October 6, 1945, he became ill at his home and died about ten days thereafter. The probable cause of death was Weil's disease, a rare disease ordinarily transmitted by contact with the excreta of diseased rats and dogs. The disease is caused by a "spirochete" which invades the blood stream,

either through the skin or ingestion. The spirochetes may be found in any place where a rodent population is likely to exist, such as sewers, mines, river water or on exposed fruit and vegetables.

The only evidence in the record to attempt to show that the decedent contracted the disease in his occupation was submitted by the decedent's foreman who stated that grimy substances accumulate on the stringers and supports sometimes used to sheath the sides of excavations; and that although he often observed holes which are caused by rats in the grass around catch basins, he never saw a rat in a sewer; and that the decedent customarily carried his lunch to work, going to a saloon at noon for beer to drink with his lunch.

The city physician testified that in the 20 years he had held his position and treated injured city employees, he had never heard of the existence of Weil's disease among sewer employees.

The Occupational Disease Act defines the term "occupational disease" as "a disease arising out of and in the course of the employment". In other words, the disease is judged to arise out of the employment only when: it is apparent to the rational mind from a consideration of all the circumstances that there is a direct causal connection between the condition under which the work was performed and the disease; where it can be seen that the occupational disease followed as an incident of the work and as the result of exposure occasioned by the nature of the employment; that the proximate cause of the disease can be fairly traced to the employment.

In this case, the record clearly falls short of establishing such a causal connection. Giving the claimant the most favorable aspects, it shows merely that the disease from which the death resulted is commonly transmitted from contact with the droppings of infected rats and that rats existed in sewers where the decedent worked.

There was nothing in the records to show that any such rats were diseased or that the decedent came in contact with any rat droppings. A mere possibility of contamination in the course of employment is not sufficient to support an award of compensation.

City of Chicago vs. Industrial Commission, et al, Supreme Ct. of Illinois, March 24, 1949, 85 N.E. Second, Page 665

### Workers Crap Game Leads to Death

CLAIMANT is the widow of Clarence Williams who allegedly died on October 23rd, 1947, as the result of certain injuries alleged to have been received in his employment.

Company resisted the claim on the ground, among other things, that decedent sustained his injuries as a result of a personal matter between he and Bennie Thornton, another employee; and that they did not arise out of or in the course of employment. Company was engaged in the business of building roads and bridges, and it was its custom to pick up employees at a certain point and transport them to their headquarters and office where the various employees were assigned to their respective duties.

On October 23rd, 1947, as was the custom, Williams was picked up by a company truck and transported to the office and headquarters of the company, and from that point on the employees were assigned to their daily work.

Although it was the custom to commence work at 7:30 A.M., there were certain exceptions: employees, on occasion, were ordered to proceed

*If so...* **MODERNIZE**

**WITH SANITARY BRADLEYS**

IN this day and age modern, clean, sanitary washrooms are a prime necessity in good employee relations. Bradleys are popular with management and workers alike because they offer many distinct advantages. Each Washfountain eliminates 16 to 20 faucets and reduces piping connections by 80%. Less water is used and hot water costs are reduced.

One Bradley serves 8 to 10 persons simultaneously with fresh, clean water. Foot-control protects hands from contagious faucet contacts and the self-flushing bowl prevents dirt collections.

Bradleys have been made for nearly 30 years. You can modernize with Bradleys now with full confidence of continued service in the years to come. BRADLEY WASHFOUNTAIN CO., 2259 West Michigan Street, Milwaukee 1, Wisconsin.

***Visit our booth 451***

**Plant Maintenance Show, Cleveland**

*BRADLEY washfountains*

# This book...in 10 minutes... prevented 1037 accidents!

***Reading time to learn how: 60 seconds***

Of course there was more to it than that. But it started when the office manager of a prominent company read a copy of *Mr. Higby Learned About Floor Safety the Hard Way.*

In its pages he learned the solution to a long-standing problem: a waxed office floor hazard that was claiming 4 or 5 slip victims week after week. The result: a way to keep his floors so slip-resistant that in five years since (when 1040 falls might have occurred) *there have been only 3 slip accidents.*

If you've searched for an answer to slippery floor accidents, perhaps this booklet can help you, too. In plain talk it explains the whys and wherefores behind the care of floors. It tells how to avoid slippery floors, and how the Legge System of Safety Floor Maintenance can help you. And it shows you how to eliminate waste motion in floor upkeep to save precious dollars.

How much is it worth to *you* to read this book? There's only one way to find out. Send for a free, no-obligation copy today. Just clip the coupon to your letterhead and mail.

Walter G. Legge Co. Inc.
101 Park Ave., New York 17, N.Y.

Please send me a free, no-obligation copy of your Mr. Higby book.

Signed_____

Title_____

Types of flooring_____

Area_____sq. ft. OB-8,

**LEGGE SYSTEM**
*of Safety Floor Maintenance*

Copyright 1949 by Walter G. Legge Co., Inc., N. Y.

*See us at Booth #420, Plant Maintenance Show, Cleveland, Ohio, Jan. 16-19*


with work at an earlier hour. This was particularly true concerning the decedent, especially on the day in question; as his job was to keep the concrete wetted down where a bridge was being constructed near the company office. It was the usual and customary practice of the employees of the company, after reaching their headquarters, to engage in a game played with dice commonly known as "craps". This crap game was carried on adjacent to the company office and the men in charge of this work, with full knowledge that such game was being carried on, acquiesced therein. As a matter of fact, all the employees, even the foreman without regard to race and color, engaged in the game.

At 7:30 A.M., during the progress of the game, a man by the name of Brownfield was shooting the dice. Bennie Thornton, a foreman, made a side bet of 50c with the decedent whereby Thorton bet that Brownfield would make his point. Williams bet that he wouldn't. The shooter made his point: as a result Thornton won his bet from Williams and was entitled to money.

Williams hesitated or refused to pay the bet he lost, and shortly after Thornton picked up a piece of "two by six" and struck Williams on the head, whereupon Williams was knocked off the table and his head struck some concrete. From the effects of either the blow or fall, either or both of them, he died.

Some of the witnesses contended that Williams was fumbling in his pockets and was evidently going to pay the money. Thornton contended that he thought that he was going to be attacked and therefore struck the blow that resulted in the decedent's death. There was no question at the time of fatal injury that Williams was on the employer's premises for the purpose of performing his labor for his employer and was subject to the call of his employer at the time he received his injury.

In view of the evidence submitted, it is evident that the crap game in which the decedent was participating had become a part of his working environment. All of the employees of the company participated habitually in this form of amusement or entertainment with the full knowledge and acquiescence of their employer.

The event leading up to the decedent's death should have reasonably

been foreseen by any reasonably prudent person. Whether justified or not, trouble is to be expected to arise from such games when participated in by both white and negroes. It is common knowledge that much less is required on the part of a negro to bring about serious trouble with a white man than would be as between two white men or two negroes.

The compensation laws are liberally construed to give relief to injured employees. In bringing men together, work brings a tendency to carelessness and camaraderie, as well as emotional make ups, and tends to cause friction between employees created by lapses into carelessness, fun-making and emotional flare-up. The employment includes associations as well as conditions and these associations include the faults and derelictions of human beings as well as their virtues and obediences.

It is not necessary that the particular act or event which is the immediate result of the injury be itself part of any work done by the employer by the claimant or otherwise. Otherwise it would be impossible to grant compensation for many injuries now compensable, such as those caused by stray bullets, unexplained falls, objects falling from outside the employer's premises and work, and many street risks, horseplay, most assaults and many other causes.

Claim allowed.

American General Insurance Company vs. Williams, Court of Appeals of Texas, Beaumont, June 30th, 1949, 222 Southwestern Reporter, Second Series, Page 907

### Eye Injury Due to Lack of Goggles

APPLICATION was filed by the claimant for additional award for violation of a specific safety requirement. The section involved, Section 10, Bulletin 207 of the Code on Specific Safety Requirements relating to machines, etc., which reads as follows: "Eye shields or suitable goggles shall be provided by the employer and worn by every employee liable to eye injury from emery, flying chips, hot scale, hot oil, flames or flashes."

The claimant was injured when a steel chip flew from the pointed chisel which he was holding and struck his eye, as he and another employee were attempting to either tighten or loosen a large bottom nut on one of the four corner posts of a plastic press.

At the time the claimant was not wearing safety goggles or any other eye protection. He testified that he was not furnished with goggles while doing any type of work for the instant employer, although he had requested goggles from the men in charge of the tool room about three days before his accident occurred. At that time he was told that there were never any goggles furnished.

A plant employee testified that there were goggles available in the tool room and in his office and that the men were instructed to use them on jobs when it was necessary to use goggles. Records further disclose that goggles had been purchased by the employer from an optical company.

One of the co-employees maintained that: he was in the tool room many times each day but he had never seen any safety goggles or glasses; as far as he knew, there were only two pair; at the time he and the claimant were performing the operation in which the claimant was injured, these two pair of goggles were being used by other workmen; that he and the claimant had attempted to obtain these goggles, but the other men were using them and

Headrest Goggles W-50 with Filter Lenses for Gas Welding, Cutting, and Brazing

"Don't Gamble!"

Type WR-50, same as W-50 but with Elastic Head Band

Eye injuries amount to about one-third of industrial accidents. Yet with proper precautions 90% of these can be prevented. All too many seem to be gambling on their good luck—and with disastrous results. Far better to follow the recommendations of safety experts and choose the right protection for each job.

*For Gas Welding, Cutting, and Brazing,* Jackson Headrest Goggles type W-50 are light and easy to wear, with or without prescription glasses, are simple and easy to adjust, easy to raise and lower. Goggle assembly is hinged from headrest with telescopic arms, held gently against the face by concealed springs. Spring clips hold arms to headrest to provide added adjustment and easy replacement. Headrest is of light, easy to clean plastic, adjustable for size. Plastic eye cups are easily fitted to the face. Outside of each cup has ventilating screen to prevent fogging and baffle plate to keep flying particles and light rays out. 50 mm. glass lenses are available in standard shades from 3 through 6, and have cover glasses to protect them.

Sold only by distributors and dealers in the U.S. and Canada. Write us for information.

Headrest Goggles G-50 with Clear Lenses for Chipping and Grinding

Type GR-50, same as G-50 but with Elastic Head Band

JACKSON PRODUCTS
WARREN · MICHIGAN

SAFETY GOGGLES · SPECTACLES · EYESHIELDS

did not want to give them up.

There was testimony to indicate that the safety advisor for the employer tried to do everything within his power to promote safety, nevertheless he was greatly handicapped by the parsimonious policy of the employer.

The referee's findings were to the effect that the employer did not furnish goggles for the men working in the maintenance department in sufficient quantities to provide the personnel in that department eye protection. However, the only section which applies to the claimant is Section 10, Bulletin 207, quoted above, which is not specific.

The claim, therefore, for application for violation of a specific safety requirement was denied by reason of the fact that the injury was not caused by the employer's violation of any safety requirement.

Antonia J. Deurno vs. Kurz-Kasch, Inc., Ohio Industrial Commission, S. F. 1671486

### No Evidence As To Nature of Death Cause

DECEDENT was employed as a chemical operator in charge of a department making ergosterol. He had a key to his employer's plant and his duties included, among other things, the opening of the plant in the morning and closing it at night.

On the morning of January 29th, 1943, he left for work in street clothes. Shortly thereafter he was found dead on the concrete floor of the plant. His feet were close to the steps leading to a platform above on which vats were located. He was found in his work clothes, and there was a "brownish dirt" on the palms of both hands. He was wearing his work shoes covered by rubber overshoes. The floor at the time was slippery and moist and the stairs were also moist, which was not an unusual condition at this location. Decedent's duties included, not only the performance of work at the floor level, but also the mounting of the steps and the checking of the vats on the platform.

There was no eye witness as to the actual occurrence leading to his death. An autopsy disclosed that death resulted from a recent fracture of the skull due to a blunt force injury applied in the left occipital region. There were no other external marks of injury except the bruise abrasion over this region. Autopsy also revealed that decedent had been in good health for his age and there was no evidence of alcohol or poisons and nothing to indicate criminal assault or self-inflicted injury.

The claim was resisted on the theory that there was no legal proof to sustain the factual finding that death resulted out of or in the course of the decedent's employment. Circumstantial evidence is sufficient to effect a fair and reasonable presumption of the facts inferred. The circumstances can disclose a preponderance of the probabilities. The only requirement in the law is that the claimed conclusion must be a probable or more probable hypothesis, with reference to the possibility of other hypotheses. In other words, probable and not the ultimate degree of certainty determines how an accident occurred.

Applying the circumstances in the aforegoing matter, it was fair and reasonable to presume that decedent met his death as the result of an accidental fall on the slippery steps in question while he was pursuing his regular employment.

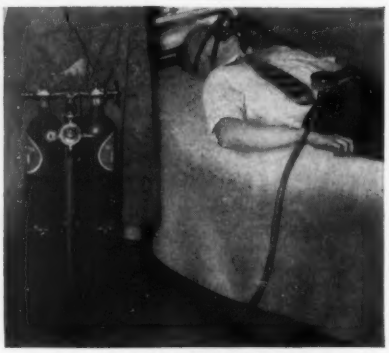
Claim allowed.

Jochim vs. Montrose Chemical Company, Supreme Ct. of New Jersey, 68 Atlantic Reporter, Second Series, Page 628, October 17th, 1949

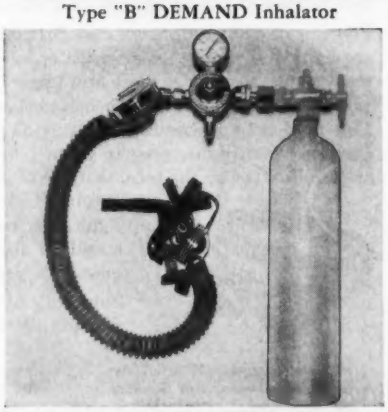

Scott DEMAND Oxygen Inhalator

• SAVES LIVES
• PROTECTS HEALTH OF PERSONNEL
at Low Cost!

Protect your safety record with Scott *Demand* Inhalator — the efficient, low-cost way to provide emergency administration of oxygen. Portable and easy to operate, the Scott *Demand* Inhalator can be used by inexperienced personnel, at any location. No adjustments of any kind—no special training needed. Supplies oxygen "as demanded" by patient, or by constant flow. Economical in use — initial cost much less than other equipment of comparable scope.



Type "B" DEMAND Inhalator



Type "A" DEMAND Inhalator

Scott DEMAND Oxygen Inhalator is made by the manufacturers of AIR-PAK Safety Breathing Equipment (using air, not oxygen) — the safe, low-cost way to deal with breathing hazards in toxic areas.

*Write for full information on Scott Demand Inhalator or Scott Air-Pak to:*

ESTABLISHED IN 1932 Scott FOR SAFETY—FOR SERVICE

MEDICAL DIVISION
SCOTT AVIATION CORP.
229 ERIE STREET LANCASTER, N. Y.
IN CANADA: SAFETY SUPPLY CO., TORONTO, ONT.

# New PRODUCTS

**NP-1 . . . NEW CLEANER-SANITIZER**—The Sugar Beet Products Company, widely known for its Formula SBS-11 — industrial skin cleanser, announces the development of a new cleaner-sanitizer, Formula SBS-50. This product eliminates the mixing of disinfectants and detergents for use on toilets, sinks, showers, washroom floors, etc. SBS-50 does two jobs in one. It sanitizes as it cleans. The product is guaranteed to reduce bacterial counts of casual contaminants to safe levels as judged by public health requirements. Reports showing as much as 50% saving in cleaning labor have been made. Formula SBS-50 is now in full scale production.

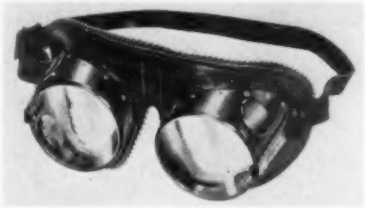
For further information, please circle NP-1 on the special postcard enclosed in this issue.

**NP-2 . . . VACUUM CLEANER**—A two-stage blower is assembled with its ¾ h.p. universal 110/220 volt motor at the bottom of this new combination mopper and dry suction cleaning machine. The blower draws dirty scrub water into a container, shutting off automatically when it becomes filled: if preferred, the container can be replaced with a double-wall dust bag to retain any dirt.

Product of The Kent Co., Inc., the machine is mounted on 12 inch, rubber-tired wheels and a swivel caster so that it follows the operator as he moves along. Standard equipment with the suction cleaner are: 12 foot suction hose, dust bag and wet dirt container, 40 feet of electric cable and plug, suction head.

For further information, please circle NP-2 on the special postcard enclosed in this issue.

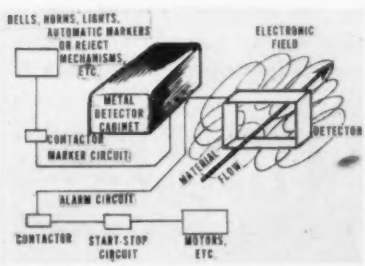
**NP-3 . . . LIGHTWEIGHT GOGGLES**—A new lightweight goggle, manufactured by Wilson Products, Inc., offers comfortable protection to induce worker use. The goggle mask is made of high grade, pliable leather, which absorbs and distributes



shock. Instant fit to face or head size is possible with a one-piece, elastic headband. Two styles are offered: Style DL 31 is designed for hot jobs, has deep, well perforated eye cups to permit air circulation and reduce fogging. Corduroy fabric-bound edges absorb perspiration. For especially dusty jobs, style DL 48 provides indirect ventilation with two baffled and screened ports on each eye cup. Both models have impact-resistant lenses.

For further information, please circle NP-3 on the special postcard enclosed in this issue.

**NP-4 . . . METAL DETECTOR** — Electronic detection of metal of any kind in non-metallic materials is the job performed by Eriez Manufacturing Company's new product. The equipment consists of two parts: the




detector, usually custom built to surround the material flow in inspection areas; and a water-tight metal control cabinet, which may be located anywhere within reasonable distance of the search coil. Presence of metal in the item to be inspected automatically stops the conveyor belt, or activates audible and visual signals, selection of which is available. The search coil and frame are adjustable to individual needs and require no adjustment.

For further information, please circle NP-4 on the special postcard enclosed in this issue.

**NP-5 . . . WATCHCLOCK SYSTEM**—Chicago Watchclock Division announces Spartan Model A, a portable watchclock, which eliminates the winding stem in the clock movement and uses a key instead. The unit is thus protected from breakage, as there is no projecting stem to be damaged by rough usage. Consisting of the watchclock, daily record dials

and fixed station boxes containing recording keys, the Chicago System is completely tamperproof. It can be installed with only a screw driver and has been approved by Underwriters Laboratories, Inc. and by the Factory Mutual Laboratories.

For further information, please circle NP-5 on the special postcard enclosed in this issue.

**NP-6 . . . WARNING DEVICE**—A new safety warning, the Electro-

Alarm Proximity Warning Device, is intended for operators of heavy equipment having booms. It fits any rig, sounds a loud signal each time the boom swings near any high voltage line. The electronic system used is doubly protected from failure and instantly indicates any breakdowns by flashing a red light in front of the operator. Operation of Electro-Alarm Sales Company's new product is simple: once turned on, the device works automatically yet allows for manual proximity control. Developed by an ex-Navy electronics specialist, the device permits warnings from 4 to 200 feet. Rain, ice and sleet do not interfere with its operation.

For further information, please circle NP-6 on the special postcard enclosed in this issue.

**NP-7 . . . PORTABLE VENTILATORS**—Work in high temperatures and noxious atmospheres is made safer and more comfortable with Mine Safety Appliances Company's new portable ventilators. Compact enough to be wheeled from place to place, the units provide both ventilating and cooling air with high-velocity, gasoline or electrically powered fans. Air is conveyed to desired points through 14 inch diameter, 16 foot long canvas ducts,

which can be collapsed into compact bundles. A two-way air flow feature permits use of the ventilators as either air suppliers or for exhausting gases and vapors in such operations as welding, sandblasting, cement unloading, etc. Units may be connected in series to reduce power requirements.

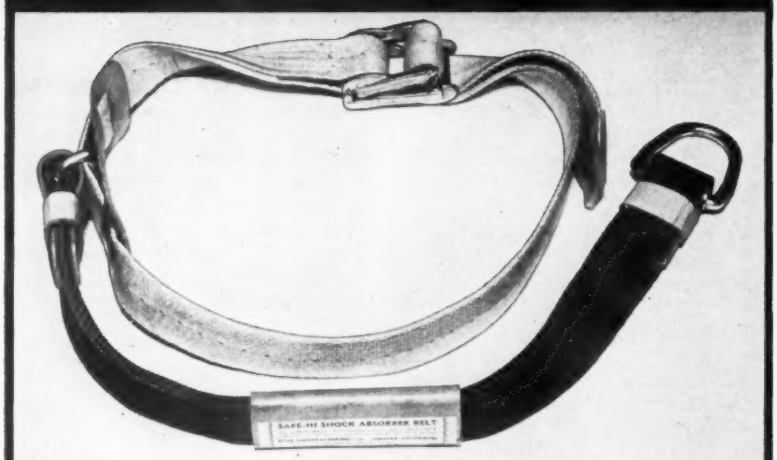
For further information, please circle NP-7 on the special postcard enclosed in this issue.

**NP-8 . . . SIGN STANDARD**—Industrial Products Company announces the manufacture of a new No Parking Standard. The unit is made with a double faced, porcelain enamel plate, 12 inches in diameter, and is supported by a steel rod on

an 18 inch cast iron base for stability. Overall height is 45½ inches. The standard sign reads No Parking in white letters on a red background, but special wording and color combinations are available. Both the upright and base are finished in weather resisting, black enamel.

For further information, please circle NP-8 on the special postcard enclosed in this issue.

Safe-Hi
SHOCK ABSORBER BELTS



THE BELT THAT "PUTS ON THE BRAKE"
when stopping a falling man!

Note the Unolyn shock-absorber, between belt and life line. The difference between a fall cushioned with this device and the violent jerk when a man hits the end of his lifeline in conventional safety belts—is the difference between stopping your auto with brakes or stopping it against a stone wall!

Unolyn (of the nylon family) has the amazing ability to elongate, without rebound, to several times its original length under such a load as a falling man. This s-p-r-e-a-d-s the impact—even when steel life lines are used. Men's lives are saved!

Shock absorbers also available with attachments to fit your present belt.

*See your safety dealers or write*

Safe-Hi PRODUCTS
ROSE MANUFACTURING COMPANY
1731 Arapahoe, Denver 2, Colo.

**NP-9 . . . VOLTAGE BOOSTER**—A new voltage booster for correcting low voltage conditions in the use of floor sanders and other portable equipment has been placed on the market by the American Floor Surfacing Machine Co., assuring full voltage for top performance of plant maintenance equipment. By the use of this transformer, low voltage is raised to a full 115 or 230 volts: no special hook-ups are required for either voltage. Two plugs are readily available to match the voltage of individual motors, so that hooking the booster to regular power source and checking the voltage input are the only operational steps. There are no moving parts on this attractively cased unit. Overall dimensions are 7¼ x 8 x 11 inches. It is air cooled and will operate one tool on a 230 volt line while another is being run on the 115 volt line within rated horse power.

For further information, please circle NP-9 on the special postcard enclosed in this issue.

**NP-10 . . . LADDER STEP**—Providing ground level stability at any lad-

der rung height, the Watson Magnesium Ladder Step protects workers and conserves their energy by eliminating precarious balancing. The step fits any ladder rung and is adjustable to any safe incline: its platform has an 11½ x 7½ inch surface of cast-in abrasive. Also handy as a platform for tools, brushes, buckets, etc., the step weighs less than 3 pounds, has no parts to wear out.

For further information, please circle NP-10 on the special postcard enclosed in this issue.

**NP-11 . . . EXTINGUISHER SEAL**—Use of the right extinguisher for different types of fires is assured with Safe-T-Seal, product of Fredriksen and Sons Fire Extinguisher Co. Brightly colored red and green, the seals identify immediately which extinguisher to use, and include complete instructions for application. Space for notes on periodic inspections is provided. A second feature of Safe-T-Seal is the fact that it must be removed for use of the extinguisher: a glance will tell whether a unit has been discharged.

For further information, please circle NP-11 on the special postcard enclosed in this issue.


SCRUB . . . *the* AIR *in your plant* CLEAN

*with* Schmieg CENTRI MERGE *Automatic* DUST and FUME Eliminator

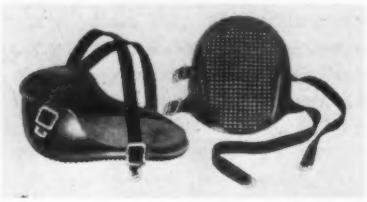
Dust and fumes don't get a chance to circulate in plants equipped with a Schmieg CENTRI-MERGE Eliminator. The moment dust or fumes develop from buffing, burring, grinding, polishing, curing or any other processing operation, they are swept up on an air stream that carries them back through ducts to a central Collection Unit. In the washing chamber of this Unit the CENTRI-MERGE high pressure centrifugal water action literally *scrubs* every last vestige of contamination from the air stream—cleans it so thoroughly that, in many cases, it can be recirculated back into the plant. That's why users are so enthusiastic about what CENTRI-MERGE accomplishes. Protects both workmen and work.

*Consult Schmieg engineers regarding your problems of dust and fume control.*

THE *best* AIR PURGE IS CENTRI MERGE

Schmieg INDUSTRIES INC.
*Engineers & Manufacturers*
303 PIQUETTE AVENUE • DETROIT 2, MICHIGAN

**NP-12 . . . KNEE PADS**—Formerly available only to the mining industry, The Judsen Rubber Works' Line of molded rubber knee pads will



henceforth be distributed for all industrial uses. The pads are vulcanized and have a waffle tread on the undersurface that prevents slipping on wet or greasy floors. A sponge rubber cushion on the inside provides a soft resting place for the knee. Designed for wearing comfort while kneeling, standing or walking, the pads fasten firmly with adjustable straps molded to the unit to eliminate eyelets that would not stand up under the strain of the straps.

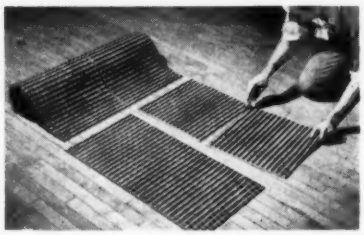
For further information, please circle NP-12 on the special postcard enclosed in this issue.

**NP-13 . . . FLASHING DISPLAY**—An illuminated changeable letter bulletin board, the DAV-SON Safety Director, is designed to attract employees' attention to plant hazard warnings. Flashing red and green

"traffic lights" catch the eye for safety messages which can be changed periodically. Manufactured by A. C. Davenport & Son, Inc., the Safety Director is packed complete with 98 3½ inch red letters and figures, and 250 1⅞ inch black letters and figures for message composition. The message panel can be removed from the chrome frame for easy re-setting of letters.

For further information, please circle NP-13 on the special postcard enclosed in this issue.

**NP-14 . . . RUNNER MATTING**—A new all-purpose matting for use as a runner or door-mat is being marketed by D. W. Moor Company. Called Do-All Matting, the low-priced, versatile product is constructed of new rubber, using strong cords as a binder. It comes in 35 by 35 inch units of four 17 inch sections, which can be easily separated with a knife to accommodate desired areas. Do-All is also available in rolls of two to seven units, joined by vulcanizing. Aside from its safety function, the matting is a dirt remover, provides a comfortable, sound-absorbing surface. Do-All is ¼ inch thick and comes in four mottled colors: red, green, blue, and a mosaic pattern. The mat hugs the floor, lies flat and is beveled on all edges.



For further information, please circle NP-14 on the special postcard enclosed in this issue.


## *Here's the Handy* DAYTON "ROLL-ALONG" SAFETY LADDER

### IDEAL FOR THE STOCK ROOM

. . . The Dayton Roll-Along Safety Ladder with its rubber tired swivel casters can be speedily moved in any direction with practically no effort.

Safety shoes with renewable treads hold ladder permanently and safely in place while ladder is occupied.

Constructed of tested airplane spruce throughout and reinforced with steel braces for additional safety. Folds compactly for convenient storing. Available in sizes 3-ft., 4½-ft. and 6-ft.

Elevating auxiliary platform which folds back in main platform adds height if desired. These ladders are being used in many of America's largest plants. See for yourself! Write today for bulletin.

***For Safety's Sake*** **. . . consult our SAFETY DEPARTMENT . . . we have the complete line of safety equipment for your every requirement.**

# DAYTON SAFETY LADDER CO.

2337 GILBERT AVE., CINCINNATI 6, OHIO
IN CANADA—SAFETY SUPPLY COMPANY—TORONTO

For complete information, just check any or all items listed, and send us the coupon.

MAIL NOW

DAYTON SAFETY LADDER CO., O. H.
2337 GILBERT AVE., CINCINNATI 6, OHIO

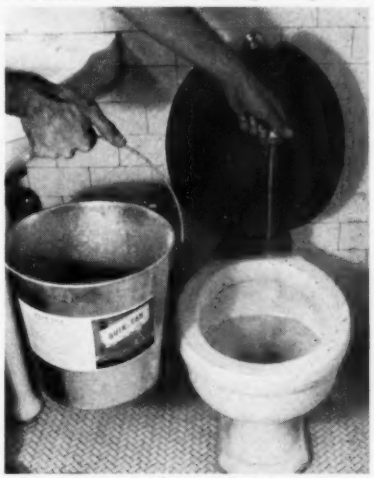
GENTLEMEN:
WITHOUT OBLIGATION ON MY PART PLEASE SEND ME FOLLOWING CHECKED BULLETINS:

| | | |
|---|---|---|
| .....SAFETY LADDERS SHOES | .....SAFETY GASOLINE CANS | .....SALT TABLETS & DISPENSERS |
| .....SAFETY LADDERS | .....OILY WASTE CANS | .....SAFETY GOGGLES |
| .....SAFETY CLOTHES | .....EXCELSIOR CANS | .....GLOVES |
| .....ROLL-ALONG LADDERS | .....WATCHMAN'S CLOCKS | .....FIRE BUCKETS |
| .....FIRE HOSE | .....ACID PUMPS | .....ROCK UP RACKS |
| .....FIRE EXTINGUISHERS | .....RESPIRATORS AND PARTS | .....“PLY” |
| | | .....EYE SHIELDS |

(Name) .....

(Company) ..... (Address) .....

**NP-15 . . . ADSORPTIVE DEODORANT**—Quik-San, a new fast-acting, powdered cleaner and deodorant for washroom sanitation is announced by the Hadco Corporation. Said to neutralize odors on the principle of



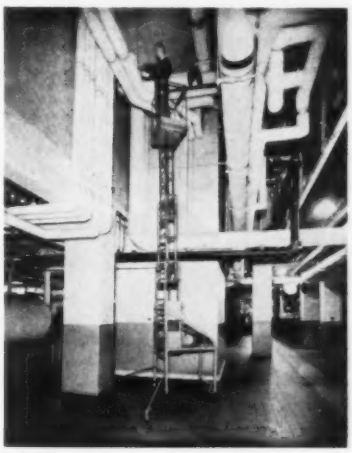
adsorption of odor molecules, Quik-San's action is based on the adhesion of particles to the cleaner-deodorant grains. It is designed for all-around washroom sanitation, removing stains and discolorations from fixtures while eliminating all odors originating at these sources. Claimed to reduce the hazard of cleaning often encountered with other, fast-acting materials, Quik-San contains no harmful acid. To use, sprinkle Quik-San in the fixtures, allow to stand for a few minutes and swab if necessary. Periodic use also helps keep traps and drains open, it is said. The cleaner is packaged in 30, 50, 100 and 200 pound containers.

For further information, please circle NP-15 on the special postcard enclosed in this issue.

**NP-16 . . . MOP DRESSING**—To aid speedy removal of dust and grit from floors, walls and furniture, Huntington Laboratories, Inc., have developed a new mop dressing, Huntolene Emulsifiable Floor Maintainer. It is claimed that when a surface has been Huntolene-cleaned daily, dust clings to it, can't get in to the air again for recirculation. Because it emulsifies, mixes with water, the solution breaks up into microscopic parts when a treated mop or cloth is washed. Embedded dirt washes out completely, leaving the mop clean, sanitary and easy to handle. Huntolene leaves a film that helps to protect sealed, wax, varnished and unfinished surfaces.

For further information, please circle NP-16 on the special postcard enclosed in this issue.

**NP-17 . . . ELECTRIC SCAFFOLD**—Atlas Industrial Corp. has developed a new electrically operated extension scaffold. With this easily operated rig, workmen can reach a



height of 26 feet. Extendable to any height, the scaffold can be maneuvered in tight places due to its roller-bearing swivel casters. The sturdy, welded-steel safety rail is stored within U frame, keeping the scaffold a compact unit.

For further information, please circle NP-17 on the special postcard enclosed in this issue.

# Useful Literature

**The publications listed below are available without charge. Simply circle the number of the items desired on the postage-free reply card bound in this issue and drop it in the mail.**

**UL-25** . . . Free safety posters, without advertising, are available to firms who desire to reduce accident frequency through employee bulletin boards. The posters are offered by the Safety First Shoe Company.

**UL-26** . . . The uses of chemical resistant maintenance coatings are fully explained by Wilbur & Williams Company's new four-page brochure. Also provided is complete data on Strenated Acid-Causticbond, a vinyl maintenance coating which can be applied over wet, rusted or pitted surfaces.

**UL-27** . . . Wilson Products, Inc. has just issued a new, 64 page industrial safety equipment catalog which provides a fund of technical and reference material, as well as product information on the company's line of eye and respiratory equipment. Materials included will help the user select proper equipment for specific hazards and give data on its use and care.

**UL-28** . . . An illustrated folder describing three models of new type M unit dust collectors is available from the Kirk & Blum Manufacturing Co. Included are data on construction, operation and maintenance, plus detailed specifications on the units.

**UL-29** . . . An eight page bulletin is announced by the Buffalo Forge Co. on its Type E and RE Electric Blowers and Exhausters. The booklet contains detailed information about the 12 models available and includes specifications, capacity chart and descriptions.

**UL-30** . . . The advantages of protecting steel columns with fireproof cement are outlined in a two-color booklet published by the Industrial Insulation Division of Eagle-Pitcher Sales Co. Subjects covered are: results of fire tests, specific data and suggested methods of application.

**UL-31** . . . A new bulletin just completed by the Morse Manufacturing Co. describes and illustrates the Rock-A-Drum vertical drum truck with which one man can position drum loads of paints, chemicals and other liquids. Method of handling drums for side drainage is given.

**UL-32** . . . A descriptive brochure on Electric Cord Company's Minuteman auxiliary light unit is available. Complete data is given on the emergency light supply, as well as its function in maintaining operation and preventing panic in the event of regular power failures.

**UL-33** . . . A handsomely illustrated, 24 page catalog of Castaloy laboratory appliances is available from Fisher Scientific Company. Included are explanations of Castaloy's properties and their importance to industrial laboratories, plus complete information on the company's line of equipment.

# . . . And Sudden Injury

**Getting thrown from a horse is funny only when it happens in the movies. Trying to balance on a saw horse to make necessary adjustments, this machine operator slipped, is headed for the concrete and the dispensary.** *(Acme Photo)*

## And Sudden Injury

ON HER WAY to becoming a painful statistic! If this young lady is lucky she will have only bruises to show for her foolishness, but one out of every five industrial accident deaths is caused by a fall. And it doesn't take a dive from a ladder top or steeple to produce fatal injuries: tumbles from heights of only a few feet can kill. It is obvious from this photo that, although a worker's feet may be only 30 inches from the floor, her head will travel in an arc of six or more feet before it strikes the concrete.

Saw horses are reliable supports—but not for people. The oft-repeated bromide "Common sense is the basis of industrial accident prevention" can certainly be applied here. No instruction in use of special equipment or complicated procedures is required to stop this time and money loss: simply using the old noodle would have told her not to try balancing on a three inch wide surface while working. Where adjustments on machinery must be made, safety step-ladders, or other devices equipped with protecting hand rails should be supplied, and workers should be instructed to use them. Rather than lose several minutes to move a ladder into position and use it, this girl will lose many working hours' wages.

Common sense is the one safety aid that no amount of lecturing, discussing, postering or statisticing will provide: if a worker hasn't already got it, the tool room can't issue it to him or her. Correct plant maintenance will help remove danger spots, but anticipating out-of-the-ordinary problems is necessary to cutting out many hazards. Investigation of this particular fall, from its occurrence back to the cause, would show that 1) a climbing aid was needed and 2) the wooden saw horse was closest at hand. To prevent recurrence of similar flops, one or both of these factors must be removed. This can be done by making the climb unnecessary: provisions for normal adjustments should be made within workers' reach, or, if impractical, machine maintenance personnel should be on duty to do the job correctly and safely. Removal of the dangerous saw horse, a glaring maintenance failing here, and substitution of proper equipment to reach the work, would have made this accident unlikely.


NOW for a better fit, more comfort, longer wear

EW, IMPROVED

NEOPRENE HOOD INDUSTRIAL

CURVED-FINGER GLOVES!

OOD has done it again! For years, HOOD gauntlets and knit wrist gloves have been the e of industry. Today, the new, improved models are ready to provide new comfort afety for *vital* hands. Exhaustive tests *prove* their superior wear! There's ample knuckle ance! Fingers and thumbs are curved for more efficiency! Gauntlet shown has thumb h reinforcement! There are no seams on the working surface! Knit wrists are *color* Both models are bigger, more flexible! Yes, be sure of new protection, new efficiency the new, improved HOOD Industrial Gloves. Order from your jobber today!

HOOD for Safety plus

HOOD RUBBER CO.
Watertown, Mass.
DIVISION OF THE B. F. GOODRICH COMPANY

Rx for executive-type
INSOMNIA

Why lose sleep worrying whether your plant Watchman is sleeping? The DETEX GUARDSMAN watches your Watchman every minute of his tour—ready to expose him should he take it into his head to sleep, shirk or skip rounds.

The DETEX GUARDSMAN is a godsend on long weekends and during extended plant closings. It operates on a continuous roll tape for as long as 96 hours, if necessary—saving a supervisory employe the chore of returning to the plant to change the Watchclock dial.

Modernize your system of plant protection with the GUARDSMAN—and say goodbye to insomnia. Send for FREE folder.

DETEX
WATCHMENS CLOCKS
PATROL
ALERT
ECO
NEWMAN
GUARDSMAN
DETEX WATCHCLOCK CORPORATION
Dept. O-1
76 VARICK STREET, NEW YORK 13, N.Y.
Sales and Service in All Principal Cities

# INDUSTRIAL *Accidents in the News...*

**These accidents are taken from the pages of the nations Newspapers. They've all happened—they didn't have to!**

**Houston, Texas,** Chronicle:

Three men were burned, all seriously, when gas from a broken line was ignited by a cigarette. Most severely injured was Eugene Kahnanek, 28, an employee of contractor Gerald C. Mora. The other two are A. T. Wade, 41, and C. E. Rutledge, 25, both employees of the Houston Natural Gas Corp. Rutledge and Wade were working on the gas line excavation, while Kahnanek was working on a nearby sewer project. Ambulance driver James Turner said Kahnanek told him that he had walked over to the gas line excavation with a cigarette in his mouth and started to light it when the explosion occurred. A call was put in for the Houston fire department and a road block was set up for all traffic going west on San Felipe. The fire was still burning briskly 30 minutes after the explosion.

*Prevention:*

Except in rare cases, a blanket "no smoking" rule creates ill-will among workers. Rather, it is usually effective to school employees in the proper time and place for cigarettes. Whatever the rules, they must apply to visitors as well as employees; and it is the workers' responsibility to prevent breaking them by outsiders. The men themselves, knowing the nature of their work, should take every precaution to guard their safety from the unwitting acts of untrained spectators.

◆

**Denver, Colorado,** News:

Richard Clark, 16, was working on a Denver Builders, Inc. construction job Wednesday when he lost two fingers of his left hand. His hand slipped into a circular saw. The accident happened at 740 Holly St.

*Prevention:*

At 16, this lad was obviously an inexperienced worker. He should have been properly indoctrinated in general safety procedure and specifically in the use of this particular piece of equipment. Mechanical aids, such as a guard to keep hands out of the danger area, should be installed on all machinery; and a pusher or stick should have been used to control the feed of materials.

*(Ed. Note: see Letters to the Editor for a description of a typical pusher device for this use.)*

◆

**Milwaukee, Wisconsin,** Journal:

Falling into a stone planing machine that he was operating, Gregor C. Hoessel, 31, a former Milwaukee policeman, was killed about 7:45 Saturday morning. The accident occurred at the Vollbrecht Cut Stone Company. Investigators for the county medical examiner reported that Hoessel apparently had suffered a fainting spell.

Hoessel's body was found by two fellow workers. His head had been crushed between a stone and the machine. Investigators said that Hoessel previously suffered fainting spells at work. He was employed as a stone cutter since 1946 when he resigned from the police force.

*Prevention:*

This accident indicates the absence of safety control over both the man and the machine. Proper protective equipment on the planer would have prevented the accident, but this worker should never have been permitted to perform such tasks in view of his previous record. His death was tragic; however, it was fortunate that he killed only himself. Had he been stricken while driving a vehicle or operating a crane, he might have injured or killed other fellow workers. Thorough physical examinations, with periodic follow-ups, must govern job assignment.

**Decatur, Illinois,** Herald:

Joseph Bruner, 46, of Newton, was under treatment in the Wabash Employees' hospital last night for severe face injuries and the loss of an eye suffered Tuesday morning in an accident at the Wabash Railroad locomotive shops.

The blade of a power saw broke off and struck Mr. Bruner on the left side of the face, tearing it from forehead to chin. He was a member of a gang working on the construction of a diesel repair section.

*Prevention:*

An employee who has been trained in the proper use of his equipment will rarely have to contend with this sort of mechanical malfunction: correct handling of machinery is the first rule of accident prevention. In case of breakage, however, an adequately guarded saw would have confined the fragments and kept them away from the operator. Had the injured man been wearing a face shield as protection from chips and splinters of the material being sawed, it would have served the second function of mitigating the damage done by the broken blade, if not eliminating the injury completely.

◆

**Ashland, Pa.,** News:

Joseph Conners, 38, suffered injuries to the right side of his neck and left side of his chest yesterday when he was involved in an accident at Hammond Coliery. Conners' right hand caught in a moving belt and the force threw him over a power wheel and to the floor. He is being treated at Ashland State hospital.

*Prevention:*

The same old story! All moving belts should be fully inclosed by a guard up to a height of at least seven feet, making it impossible for accidents of this type.

# TECHNICAL FILE ON SOLVENTS

**E 55. EXPOSURE EFFECTS.** No safe limits have yet been adopted for the work period, probably because the irritating effect of the vapor is its own most efficient warning signal of danger. Sudden, severe exposures, due to leaks or broken containers, cause a "high" feeling in the worker, then depression. If rescue is not prompt, death occurs from a paralysis of the respiratory system. Controls of the hazard are similar to those outlined for formaldehyde.

**E 56. WORKERS EXPOSED.** Workers exposed include:

Disinfectant makers
Dye makers
Explosives workers
Lacquer workers
Mirror silverers
Pyroxylin-plastics workers
Resin (synthetic) workers
Rubber (synthetic) makers

**E 57. ALDEHYDE CHART.** The following aldehyde series (adapted from Henderson & Haggard) shows the less familiar ones in their relationship to those already mentioned:

| *Name* | *Formula* | *Boiling Point Centigrade* | *Effect* |
|---|---|---|---|
| Formaldehyde (methanal) | HCHO | —21.0 | Primarily irritant, yet also anesthetic or narcotic |
| Acetaldehyde (ethanal) | $CH_3CHO$ | 21.0 | Primarily irritant, yet also anesthetic or narcotic |
| Propionaldehyde (propanal) | $CH_3CH_2CHO$ | 48.8 | Primarily irritant, yet also anesthetic or narcotic |
| Butyraldehyde (butanal) | $CH_3(CH_2)_2CHO$ | 75.7 | Primarily irritant, yet also anesthetic or narcotic |
| Acrolein (propenal) | $CH_2CHCHO$ | 52.5 | Primarily irritant, yet also anesthetic or narcotic |

**E 58. TURPENTINE.** Turpentine is mainly pinene ($C_{10}H_{16}$) but usually contains other terpenes, and is a colorless liquid, whose vapors are chiefly irritants. Boiling point is 155° Centigrade. It is only slightly soluble in water, but concentrations of over 720 parts of the vapor per million of air have been found to cause intense eye irritation and throat burning, headaches and dizziness. Heavy doses cause the symptoms of an anesthetic poisoning of the milder type. Vomiting and abdominal pain have been reported. Over prolonged periods of exposure a loss of appetite and general weakness result. Any absorption is usually eliminated by the kidneys (an odor of violets is characteristic of the urine) and the only permanent damage recorded generally is a nephritis or disease of the kidneys.

**E 59. CONTROL.** Safe concentration limits of from 200 to 700 parts of the vapor per million of air have been suggested. Good general ventilation, covered processes, and care in handling are needed in controlling the hazard. Pure spirits of turpentine, most familiar in making paints, are produced by tapping turpentine pine trees. The product has been replaced somewhat in recent years by cheaper substitute thinners, like petroleum distillates and distillates of the brush and stumps of turpentine pine. The latter compound may contain impurities, such as methyl alcohol, formaldehyde, and phenols (see Index) and has been reported to cause dermatitis in exposed workers.

**E 60. WORKERS EXPOSED.** Occupational hazards are possible with such workers as the following:

Art-glass workers
Cementers (rubber)
Compositors
Dry Cleaners
Dye makers
Enamelers
Ink (printing) makers
Linoleum makers
Painters
Paint makers
Petroleum-refinery workers
Polishers
Polish makers
Printers
Rubber workers
Shellackers
Shoe factory operatives
Textile printers

**E 61. MINIMIZING HEALTH HAZARDS OF FOREGOING ANESTHETIC VAPORS.** Discounting the *safety* hazard of flammability, we can regard their vapors as primary anesthetics that may cause local irritation to the exposed worker, but are dangerous mostly in high concentrations as asphyxiants. Local troubles, such

# TECHNICAL FILE ON SOLVENTS

**SAVE THIS VALUABLE REFERENCE MATERIAL: BUILD UP A PERMANENT OFFICE FILE**

as inflammation of skin, eyes, and air passages are handled mainly according to symptoms after either removing the worker from the hazard, or removing the hazard. Such removal tends to restore the victim's nervous system to its former fitness within a short interval without serious damage. Even prolonged exposure to small concentrations does not normally produce organic changes, and removal again repairs the general state of health.

**E 62. ACUTE POISONING.** In acute poisoning where the worker is overcome, the rescue treatment and control of the hazard follows that outlined for carbon monoxide. Death from these anesthetics generally results from paralysis of the respiratory nerve centers. The heart continues to beat for several minutes after breathing stops, so manual artificial respiration by the prone method is a hopeful procedure in such cases. Oxygen with 7 per cent to 10 per cent carbon dioxide usually is administered to the victim, and he is kept warm and at rest for several hours after he revives. During this entire period, rapid elimination of the anesthetic from the blood is the goal. (*Deep* anesthesia resembles alcoholic intoxication; the subsequent vapors have an effect demonstrated to be more toxic and more difficult to repair).

**E 63. VENTILATION IMPORTANT.** As pointed out in specific hazards of this group, general ventilation systems for the work room, enclosure, isolation, or exhausting of processes kept at a minimum temperature, even if it means the refrigeration of the solvent, all have their place in the control of exposures. Instructions to the worker in care of handling will minimize accidents.

**E 64. HYDROCARBONS OF THE HALOGEN SERIES.** This group of non-flammable, but toxic solvents is often referred to as the chlorinated hydrocarbons, but also includes the other halogens, the bromides, fluorides and the iodides. For the purpose of simplicity, the members of this series can be divided into:

1. The methane ($CH_4$) compounds; methyl chloride, bromide and iodide; dichloromethane; chloroform; carbon tetrachloride; and the fluorine members, di- and tri-chlorodifluoromethane. In this group the chlorine atoms take the place of hydrogen.
2. The ethane ($C_2H_6$) compounds: ethyl chloride (also called hydrochloric ether), bromide, and -iodide; dichlorethane, trichlorethane, tetrachloroethane and pentachloroethane. Here again chlorine replaces hydrogen.
3. The ethylene ($C_2H_4$) derivatives: vinyl chloride, dichlorethylene, trichloroethylene, and tetrachloroethylene. Here the chlorine atoms are added on.
4. In addition, other common members of this group are chloroprene and the chlorinated naphthalenes, tars or diphenyls.

**E 65. EXPOSURE EFFECTS.** The members of this group in general are considered to be *deep* anesthetics. This effect is produced in industry by overwhelming doses, but in this group it is accompanied by an insidious toxic action. During deep anesthesia, the victim's body functions can become deranged and permanent organic changes take place, if the state of intoxication lasts several hours. Death may occur, as with the primary, light anesthetics discussed previously, when the respiratory system becomes paralyzed. Unfortunately, however, death may also occur shortly from the destructive action on the heart by the *poisons* of this group of solvents. And even a day or so after consciousness is regained, death may result from *degeneration* of the liver, etc. If the victim recovers, there still may be *permanently disabling damage* suffered by the nervous system, heart, kidneys or other organs.

**E 66. LOW CONCENTRATIONS DANGEROUS ALSO.** Also different from the primary anesthetics is the way in which prolonged, repeated, non-anesthesia producing exposures to concentrations of vapors from this group react on the individual worker. Because the vapors are poisonous in action, generally from the release of hydrochloric acid when the gases break down within the body, even *low concentrations* can cause irreparable body damage over sufficient periods of exposure. Workers vary in susceptibility, but the amount absorbed in the blood also varies, not so much with the parts per million concentration of the vapor in the work room as with the *weight* and *solubility* of the vapor. When *all three* are low or when the exposure is short, the resulting damage may be repaired, symptoms cleared after removal from the exposure. If the rate of *damage* is greater than that of *repair*, symptoms of the resulting permanent damage will inevitably make their appearance.

*(To be continued)*

**OIL AND GREASE ABSORBENTS**

**From Page 26**

exits and main passageways to facilitate movement about the shop; and on special potential danger points—ladders, catwalks, stairways — absorbents make practically any type of floor surface safe and easy to clean. Maintenance savings stem from greatly shortened cleaning time: absorbent is scattered on all floor space liable to become fouled by grease, solvents, oil, etc., at night, and swept up the next morning. A fresh layer then protects floors and workers throughout the day. No flushing or use of solvents is generally required to produce spotlessly safe floors when absorbents are used regularly. In areas where heavy grease and other accumulations normally create special problems, absorbents remove much of the need for extra cleaning attention.

Chemically inert, the absorbent is unaffected by alkali and acids. In plants where acids are frequently handled, a coating on floors, benches and storage areas can prevent damage. Walking on it accelerates its absorbing action; so that heavy traffic over absorbent covered areas helps, rather than harms, thorough cleaning.

As an example of how efficient these floor absorbents handle oil, it is of interest to know that some plants use the material for cleaning workers' shoes! A large bin of absorbent is kept in which oil-soaked shoes are buried. After several days' treatment, they are clean and safe, ready to return to duty. This method has been found to greatly prolong shoe life and solved the problem of workers slipping on clean floors.

The difference in productive efficiency between plants with good floor maintenance methods and those without is well described by the safety engineer of a Chicago steel company who said: "We used to be ashamed to take visitors through our plant. We had to keep a supply of overalls and rubbers on hand for their use. The plant was marred by oil slicks and a man had to be darn careful where he stepped. At the end of a shift the men looked like grease monkeys. Now, with six months' use of a chemical absorbent, and one man made responsible for its application, we are proud to take outsiders through the plant. The floor is so clean that you can almost eat off it."

Many plants have run departmental tests to determine the efficiency of oil and grease absorbents. Untreated sections are found to become filthy with oil soaked shavings, grease and oil dripping from machines. Movement from one area to another was precarious—production and employee morale dropped. Treated sections became spic and span, seemed actually brighter. It became obvious that production increased in these areas, quality of work improved and employee morale ran high.

Equally as important as its plant maintenance and worker safety function is the absorbent's fire prevention benefit. In fact, the first reason for its ready acceptance by safety men was anti-combustion qualities.

Countless small blazes and many major fire losses are still being traced to sawdust used to "clean up" oily floors. Fortunately more and more industrial plants are replacing sawdust with approved granular type oil and grease absorbents. These plants have discovered that it is false economy to use sawdust. There still remains, however, a large number of smaller plants who are needlessly exposing themselves to dangerous fire hazards through use of sawdust. A selling job remains to be

**1000 TABLETS**
**$8.50**
In lots of 5000 tablets or more, $8.00 per 1000.
Note: Glassine envelopes supplied for individual use.

# ABSENTEEISM
## due to
# COMMON COLD

Use MELCO, the new Anti-Histomine Tablet that has already proven itself!

The very same formula used successfully in U.S. Navy and clinical tests.

Prevents — controls the common cold with 70-90% effectiveness when used within first 48 hours . . . the earlier the better!

The first important aid in cutting down loss of working hours resulting from the common cold.

Manufactured under rigid analytical control.

**Keep them on the job . . . Order At Once!**

*Instructive Posters Supplied Free*

**SILVER ROD PHARMACAL CO.**

*Established 1919*

**660 Newark Ave. Jersey City 6, N. J.**

Dockson's series 76 welder's goggles shown above.

Dockson HEAD AND EYE PROTECTION

Specialists in "Better-built" head and eye protection, designed through our years of experience for . . . • Greater comfort • Maximum protection • Moderate cost.

There is a DOCKSON distributor near you. Name on request.

*Write for our complete safety equipment catalog.*

DOCKSON CORP. • 3839 Wabash • Detroit 8, Mich.

SURESEAL PK GLOVES WITH GRIPTITE FINISH

GLOVE COST ~~$9.90~~ 60¢

In a tough, on-the-job test, one manufacturer found that Sureseal PK Gloves with Griptite Finish wore 18 times longer, handled 18 times as many pieces, as good hot mill gloves heavily wrapped with friction tape. 18 pairs of hot mill gloves (plus friction tape) were costing the manufacturer $9.90. He got the same amount of service from one pair of Sureseal PK gloves costing 60¢, a savings of 93%.

Sureseal PK Coated Gloves with non-slip Griptite Finish can turn in some nice savings for you, too.

*For details write:* Dept. O

THE SURETY RUBBER CO. CARROLLTON, OHIO

done—Safety engineers everywhere should make it their responsibility to educate all top management about the many advantages of granular type oil and grease absorbents.

Unlike sawdust and shavings, these materials, even when saturated with oil, will not support combustion unless exposed to extreme temperatures. Laboratory tests of the product show no ignition when samples containing 25 per cent cutting oil are subjected to flames for one minute. Cigarettes and matches, often dropped carelessly, will merely burn themselves out on top of the protective layer.

In the final analysis, absorbent costs are negligible. Several hundred dollars a year is little enough to pay for protection from fires which might easily cost hundreds of thousands plus the lives of workers. One plant found that the money saved in cleaning time alone, more than paid for its complete absorbent supply. The indirect costs of falling and slipping accidents are tremendous: time and production lost, higher insurance premiums, training replacement labor, can all be minimized through sound floor maintenance procedures. Several days off the job for one employee, due to a fall, is more expensive than the cost of a year's supply of the material which could have prevented the accident.

## CARNIVAL OF SAFETY

From Page 23

The last published honor roll included 10 departments, whose records ranged from six months to 7.3 years of injury-free operations.

Strange as it might seem, toe injuries stand at the head of the list of disability causes to Hoover male employees so far this year. Safety shoes would have prevented these toe injuries. Every effort is made by the company to impress upon the working force the importance of safety shoes.

In the course of a year, the safety department issues regular bulletins to all superintendents and foremen, to full supervisors, and posts bulletins throughout the plant on the various bulletin boards. In these bulletins attention is called to all accidents that happen and the names of the employees involved in these accidents are included in the bulletin. We feel that this has a marked tendency to focus personal attention upon safety in every department.

Following the start of the Carnival of Safety, 22 successive days passed before an employee was injured. This

man dropped a pipe on his foot and broke a toe.

Then 41 days passed without a lost-time injury. This time a die-cast machine worker dropped an adjustment wrench that bruised a toe so that he was unable to work the following day.

Only three lost-time injuries occurred during the three months of the Carnival of Safety campaign. The third of these accidents was also a foot injury that broke a bone.

Those entrusted with the safety education at The Hoover Company plant feel that by injecting an element of fun, combined with the possibility of personal financial gain, into a concentrated drive, the necessary power was provided to focus attention and keep it focused upon safety as a vital part of every job in the plant.

**DUST CONTROL**
**From Page 21**

manufactured by American Wheelabrator & Equipment Corp., Mishawaka, Ind.

The collector unit itself is enclosed in a fabricated steel cabinet 6½' long, 4' wide and approximately 10' high. Space limitations imposed by the ceiling height necessitated setting the collector on foundation pads on the floor with hoppers extending through the floor. Dust laden air, at the rate of 1900 cu. ft. per minute is filtered through the 540 sq. ft. of filter cloth.

The dust laden air entered the collector at a plenum chamber where the sudden expansion causes its velocity to drop sufficiently so that the heavy particles settle out into the hopper below. The smaller dust particles float upward into the cylindrical tubes and are trapped there while the filtered air passes through the cloth and is discharged back to the working area.

The cloth tubes themselves are held in place at the bottom by means of spring steel bands fitting into a machined cell plate while the top of the bag is supported from a shaking mechanism. The inlet air may be shut off periodically and the accumulated dust shaken out of the bags into the hopper below.

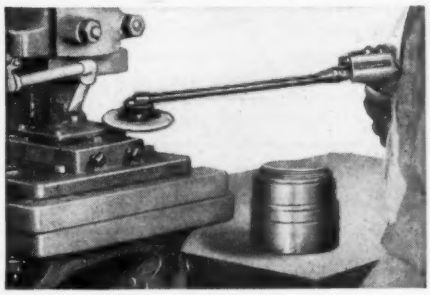
In the installation at Kuert Concrete the hopper discharges directly to the cement elevator located outside the building wall. Thus, the collected cement is returned directly to the storage system.

Careful hooding at each dust source holds the air requirements to a minimum and permits the use of a somewhat smaller collector than would normally be required. This is of considerable importance in view of the limited space available in the plant. The reduced air volume means less cement carried out of the system.

Figs. 1 and 2 illustrate the arrangement for ventilating the batcher and show the special hooding that was installed. The center unit of the batcher is the cement weighing hopper—an important source of dust in the batching operation.

As shown in Fig. 1, there is a vent towards the top of the cement weighing hopper for the escape of air displaced when the cement is charged into the hopper. This vent ties in with the main duct coming from the batching hopper.

An even more serious dust problem is encountered when the weighing hopper discharges into the batching hopper along with the sand and gravel. The hooding marked "A" in Fig. 2 was installed to close, as far as possible, the opening between the

KEEPS HANDS Out of DANGER ZONE

LITTELL
Pres-Vac SAFETY FEEDER

LITTELL Safety Feeder speeds up the picking up and feeding materials into presses, keeping hands out of Danger Zone. A strong vacuum is formed in the cup. Unit uses compressed air; 40 to 45 lbs. operates. Picks up any flat-surfaced material; wet, oily or dry. Single- and double-cup types. Littell makes a complete line of press-room equipment.

REQUEST BULLETINS
F. J. LITTELL MACHINE CO.
4109 Ravenswood Ave., CHICAGO 13, ILL.

Stanzoils

Grip Oily Things As If Dry!

Liquid-Safe Hands Do Better Work...

Most rubber or neoprene gloves are slippery as wet eels — but not neoprene Stanzoils. Marvelous non-slip finger finish grips oily work as if dry, gives workers assurance and speed. Made of Du Pont neoprene, these gloves far outlast rubber, protect hands in harmful materials at extra low cost per day. Stanzoil hand safety pays you in more production, less costly injury claims. Also available in white neoprene. Write today for informative catalog.

*Synthetic Rubber Division*
The Pioneer Rubber Company
638 Tiffin Road Willard, Ohio, U. S. A.
Los Angeles

STANZOIL BY PIONEER

OVER 30 Years OF QUALITY GLOVE MAKING

IPCO UTILITY RAIN SUIT

Offers finest all-weather protection.

Absolutely waterproof and windproof . . Patterned roomy to be worn over regular clothing.

Consists of coat, pants and detachable hood. Double texture fabric with a sheet of solid rubber vulcanized in between assures waterproof qualities. Olive drab color.

BULLETIN M-10A

IPCO
Safety Equipment for all Industries
INDUSTRIAL PRODUCTS COMPANY
3830 N. FOURTH STREET • PHILADELPHIA 33, PA.

DUNKING STATIONS!
Answer Your Plant Smoking Problems

Unit No. 2 for mounting on walls, columns and posts.

Unit No. 1, (not illustrated) same as unit No. 2 but with upright and base for use on floors, aisles, etc.

Send for illustrated folder which gives complete details.

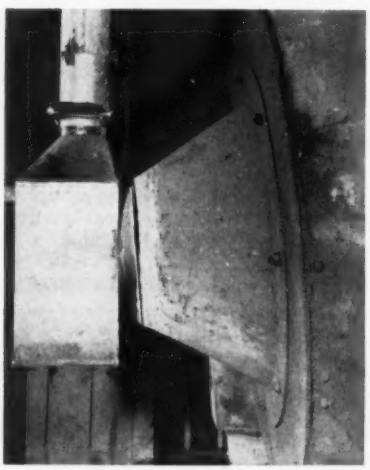
STANDARD INDUSTRIAL PRODUCTS
1710 Main St. Peoria, Illinois

STANDARD INDUSTRIAL PRODUCTS CO.
1710 Main Street, Peoria, Illinois

weighing hopper and the batching hopper. This reduced greatly the amount of air required to suppress any dust created during the charging operation. The front panel is held in place by a simple locking device and can be easily removed to provide access into the interior of the hopper for periodic cleaning. This should be done every day to prevent build-up of cement on the walls of the hopper.

The two plates (B in Fig. 2) on either side of the duct cover access holes. Through these, the operator can punch down any frozen aggregate or sand that may hang up in the hopper chute.

The duct work from the weighing hopper vent and from the batching hopper are looped overhead in order to keep the working area open.



**A closeup of the hooding at the vent on the mixer.** *(All photos courtesy American Wheelabrator & Equipment Corp.)*

Fig. 3 illustrates the hooding arrangement used on the exhaust vent at the end of the mixers. The purpose of these vents is to permit the escape of displaced air as cement, sand, gravel and water are charged into the mixers. Naturally, a certain amount of cement dust is carried out with the vented air. Because of the fact that the mixers must tilt to discharge each batch, no rigid connection could be made between them and the duct work.

The arrangement shown provides adequate ventilation with air being drawn into the hood through the small area separating the mixer and the hood as well as through the mixer itself. This acts as an effective dust seal and prevents dust escaping through the aperture. A hinged door at the bottom of the hood permits ready removal of any cement which settles out in the duct and allows easy cleaning of the hood.

Piping from the dust collector hopper passes through the outside wall of the building to the elevator. Special relays incorporated in the electrical system insure automatic shaking of the bags whenever the collector is shut off. In this way there is no chance of appreciable quantities of cement being left in the bags over week-ends when conditions might arise which would cause the cement to "set up".

Because the material collected is fed directly back to the cement elevator it has not been possible to keep an accurate record of the amount of material saved by the ventilation system. However, during the first week or two of operation, the return spout to the elevator was not hooked up and the cement shaken down at the end of each day was collected in bags and weighed. This was during the winter months and the best daily production during that period was 418 cu. yd. in 1 day. The amount of cement recovered from the collector for that day's operation was approximately 3 sacks, so that it can be roughly estimated that at capacity operation the collector will recover between 6 and 7 sacks of cement per day.

The primary advantage, though, has been the greatly improved working conditions in the plant. This makes itself felt in improved employee relations, more efficient and accurate operation and in the impression it creates on prospective customers inspecting the plant.

**PLANT MAINTENANCE SHOW**
**From Page 16**

GEORGE E. KECK, Superintendent Work Analysis Division, United Air Lines, Chicago, Ill.

**8:00-10:00 P.M.**

"How Much *Does* Maintenance Cost?"
J. E. SUTHERLAND, Manager, MacDonald Brothers, Inc., Detroit, Mich.

"How Much *Should* Maintenance Cost?"
ALBERT RAMOND, President, Albert Ramond & Associates, Chicago, Ill.

"Budgeting the Maintenance Operation"
LYMAN A. DARLING, Supervisor of Power, Water, and Maintenance Section, E. I. duPont deNemours & Co., Wilmington, Del.

**TUESDAY, JANUARY 17**
**9:30 A.M.-12:30 P.M.**

"Selection and Upkeep of Lighting Equipment"

R. M. SMART, Divisional Lighting Engineer, Sylvania Electric Products, Cleveland, Ohio

"Upkeep of Motors, Controls, and Distribution Equipment"

H. E. HARDENBROOK, Works Engineer, General Motors Corp., Buick Div., Flint, Mich.

"Using Electrical Instruments in Maintenance"

R. J. TEETSELL, Meter Division Instrument Specialist, Westinghouse Electric Corporation, E. Pittsburgh, Pa.

**2:15-4:30 P.M.**

"Upkeep of Floors, Walls, and Roofs Including Painting and Cleaning Schedules"

W. P. SHEEHY, Maintenance Engineer

T. C. RICHARDS, Manager, Elevator Operation and Maintenance and Plant Cleaning, The B. F. Goodrich Co., Akron, Ohio

"The Relationship of Lighting and Color to Production"

C. E. EGELER, Illuminating Engineer, General Electric Company, Nela Park, Cleveland, Ohio

"Sanitation and Housekeeping"

J. LLOYD BARRON, Sanitary Engineer, National Biscuit Co., New York, N.Y.

**WEDNESDAY, JANUARY 18**
**9:30 A.M.-12:30 P.M.**

*Panel Session:* "Preventive Maintenance as it is Influenced by Proper and Improved Lubrication Practice"

*Panel:*

C. L. POPE, Lubrication Engineer, Eastman Kodak Co., Rochester, N.Y.

G. L. SUMNER, Lubrication Engineer, Westinghouse Electric Corporation, E. Pittsburgh, Pa.

L. A. DANSE, Lubrication Engineer, General Motors Corp., Detroit, Mich.

CHARLES PRITCHARD, Lubrication Engineer, Republic Steel Corp., Cleveland, Ohio

O. L. MAAG, Research Chemist & Lubrication Engineer, Timken Roller Bearing Co., Canton, Ohio

*Chairman:*

E. RALPH HARRIS, Sales Manager, Stewart-Warner Corp., Chicago, Ill.

**7:30-10:00 P.M.**

Dinner (sponsored by Cleveland Engineering Society)

**THURSDAY, JANUARY 19**
**9:30 A.M.-12:30 P.M.**

"Application of Service Equipment"
STEPHEN SENKO, Chief Engineer, Personal Products Corp., New Brunswick, N.J.

"Protecting the Plant and the Worker"

H. E. BEAVEN, New England Division Manager, American Mutual Liability Insurance Company, Boston, Mass.

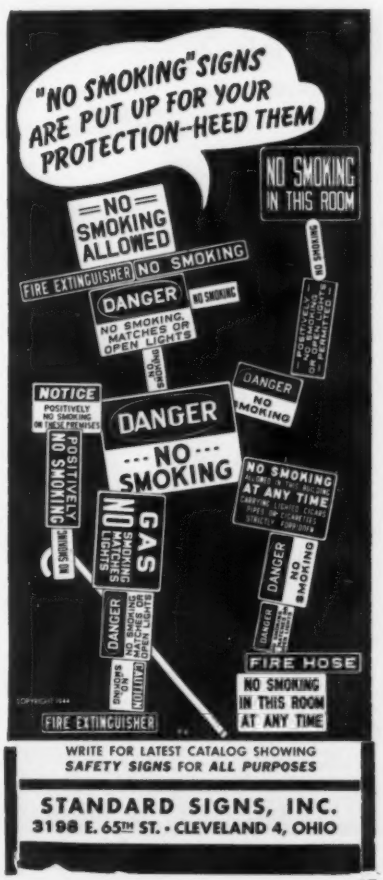
"The Importance of Maintenance to Safety"

HAROLD M. ERICKSEN, Director of Safety, Nash Kelvinator Corporation, Detroit, Mich.

## EXHIBITORS

| COMPANY | BOOTH NO. |
|---|---|
| Aeroquip Corporation | 416 |
| American Society of Lubrication Engineers | 1 |
| Anchor Post Fence Division, Anchor Post Products, Inc. | 445 |
| Atlas Industrial Corp. | 341 |
| Baker-Roos, Inc. | 449 |
| Bay State Abrasive Products Co. | 415 |
| Bill-Jax Inc. | 447 |
| Bradley Washfountain Co. | 451 |
| The Brooks Boiler Treatment Co. | 424 |
| Clark Sales Corp. | 212 |
| Commercial Filters Corporation | 429 |
| Conover Mast Publications, Inc. | 110 |
| Copperweld Steel Co. | 484 |
| Dockson Corp. | 483 |
| The Eagle-Picher Sales Company | 112 |
| Electric Cord Company | 425 |
| Electrical Construction & Maintenance | 401 |
| Eriez Manufacturing Co. | 443 |
| Factory Management and Maintenance | 301 |
| Federal Electric Products Company | 462 |
| The Felters Company | 423 |
| Flexrock Company | 427 |
| Garlock Packing Co. | 124 |
| General Electric Co. | 302 |
| Graton & Knight Company | 213 |
| Hanlon and Goodman Company | 431 |
| Elof Hansson Inc. | 436 |
| Heinemann Electric Company | 437 |
| R. M. Hollingshead Corp. | 485, 486 |
| E. F. Houghton & Co. | 2 |
| Industrial Maintenance | 426 |
| Industry & Welding | 121 |
| Institute of Industrial Launderers, Inc. | 455 |
| Insto-Gas Corporation | 461 |
| Invincible Tool Company | 8 |
| S. C. Johnson & Son, Inc. | 409 |
| The Kent Company Inc. | 119 |
| Koppers Co., Inc. | 4 |
| Walter G. Legge Co. | 420 |
| Laminated Shim Co. | 111 |
| Leslie Co | 410 |
| Lightfoot Schultz Company | 434 |
| Lincoln Engineering Co. | 9, 10 |
| Marsh Stencil Machine Company | 430 |
| The Martindale Electric Co. | 114 |
| The Master Builders Co. | 418 |
| The McCaskey Register Company | 107 |
| Micro Switch | 487 |
| Modern Sanitation | 421 |
| C. A. Norgren Co. | 342 |
| Oakite Products, Inc. | 456 |
| O'Brien Manufacturing Co. | 450 |
| Occupational Hazards | 120 |
| Operating Engineer | 401 |
| The Oster Manufacturing Company | 206 |
| Owens Corning Fiberglas Corp. | 432 |
| Owens-Illinois Glass Company | 488 |
| Patent Scaffolding Co. | 419 |
| Pittsburgh Corning Corporation | 417 |
| Plant Engineering | 201 |
| Powder-Power Tool Corp. | 104 |
| The Ridge Tool Company | 452, 454 |
| Safway Steel Scaffolds, Inc. | 413 |
| Sarco Company, Inc. | 113 |
| Solvent Service Co. | 433 |
| Stemco Corporation | 414 |
| Alemite Division of Stewart-Warner Corporation | 457, 460 |

RAISE YOUR WATCHMAN'S EFFICIENCY
LOWER YOUR INSURANCE COSTS
with the
CHICAGO WATCHCLOCK System
Puts Pep in the Step of Watchmen
Pays for Itself —
quickly—through reduced insurance rates. Then makes money for you, year after year! Greatly increases your protection against fire, theft and vandalism. Costs little. Anyone can install system. Only tool needed is a screw driver! Used all over the world! Write today to
Get This Folder
WHO'S WATCHING YOUR WATCHMAN TONITE?
CHICAGO WATCHCLOCK
Division of GREAT LAKES INDUSTRIES, Inc.
The First—and Still the First
1535 S. Wabash Ave., CHICAGO 5
Offices in Principal Cities



*For* SLOW AND NON-HEALING WOUNDS

and in Industrial

***BURN CASES***

use

**DIONOL**

Dionol Ointments melt at body temperature for almost immediate effectiveness.

*Write for samples*

**DIONOL PHARMACAL COMPANY**

Ferndale 20, Michigan



*Safety Pouches*

WORN ATTACHED TO LINEMEN'S BODY BELT.

Keeps screws, bolts and other parts in easy reach and speeds up the job. Sturdy canvas construction. Reinforced top edge to provide easy access. Attaches to the belt by means of web strap loops or snap hook. Top measures 8¼" x 2½"; overall depth 8¾". Other styles available.

BULLETIN M-10B

IPCO

*Safety Equipment for all Industries*

**INDUSTRIAL PRODUCTS COMPANY**

3830 N. FOURTH STREET • PHILADELPHIA 33, PA.



Sugar Beet Products Co. ..... 15
Sunroc Refrigeration Company .....479
Tempo Products Co. .....104
G. H. Tennant Co. .....115, 116
Thomas Flexible Coupling Co. .....408
The Tile-Tex Division The Flintkote Company ..... 6
Toledo Pipe Threading Machine Co...330
The Tremco Manufacuring Co. .....103
The Trumbull Electric Mfg. Co...440, 442
The Truscon Laboratories, Div. of Devoe & Raynolds Co. Inc. .....340
United Chromium Incorporated .....422
United Laboratories, Inc. .....428
U. S. Gutta Percha Paint Company....412
Up-Right Scaffolds, Division of Up-Right, Inc. .....318
West Disinfecting Company .....411
Western Waterproofing Company ....118
Wilshire Power Sweeper Co. .....439
Wynn Friction Proofing Co. of Ohio Inc. .....438
Copperweld Steel Company .....484


**FLAMMABLE MATERIALS**

From Page 15

away from danger should be provided. Refuse and waste cans should be provided with self closing tops so that oil and solvent saturated rags, if ignited, will burn themselves out without causing general blazes. Daily, or more frequent if necessary, emptying of these cans should be a part of these departments' operating schedules. As in the storage area, self closing doors and extra attention to fire extinguishing equipment are called for in finishing department and similar places.

These potential danger areas should be as far removed as is practical from machinery, cutting, assembling and other departments from which sparks might come; and, wherever possible, volatile liquids should be used only in them. A large number of fires start due to finishing or cleaning with flammables in temporary or other unequipped places by untrained personnel. Last minute "touch-ups" in the shipping department, parts and tool cleaning without special, protected units for this work, are examples of fire hazards permitted through improper job organization.

In addition to these special protective measures for departments where solvents are in regular use, sound maintenance calls for attention to their threat throughout the plant. The following points will aid in checking all departments for susceptibility to flammable liquid dangers.

1) Keep all waste in enclosed, metal cans. Empty them at least once a day.

2) Check ventilating system and other ducts, as part of a regular maintenance schedule to prevent their clogging or the accumulation of vapor containing refuse.

## ADVERTISERS' INDEX


American Optical Co. .....17
Ansul Chemical Co. .....10

Bausch & Lomb Optical Co. .....Inside Back Cover
Bradley Washfountain Co. .....29

Chicago Eye Shield Co. ..... 6
Chicago Watchclock Corp. .....47

Dayton Safety Ladder Co. .....36
Detex Watchclock Corp. .....39
Dionol Pharmacal Co. .....48
Dockson Corp. .....44

Edmont Mfg. Co. .....25

Finnell System, Inc. ..... 4

Gro-Cord Rubber Co. ..... 3

Hood Rubber Co. .....39
Hy-Test Div. International Shoe Co..... 7

Industrial Products Co. .....46 and 48

Jackson Products Co. .....31

Kirk & Blum Mfg. Co...Inside Front Cover

Walter G. Legge Co. .....30
Lehigh Safety Shoe Co. Inc. .....11
F. J. Littell Machine Co. .....45

Mine Safety Appliances Co. ..... 9

G. H. Packwood Mfg. Co. .....18
Pioneer Rubber Co. .....45

Rose Mfg. Co. .....34

Schmieg Industries, Inc. .....35
Scott Aviation Corp. .....32
Silver Rod Pharmacal Co. .....43
Speedi-Dri Corp. ..... 8
Standard Industrial Products Co. .....46
Standard Signs, Inc. .....47
Stonehouse Signs, Inc. ..... 2
Sugar Beet Products, Inc. .....13
Surety Rubber Co. .....44

Wagner Sign Service, Inc. .....12
West Disinfecting Co. ..... 1


3) Maintain proper insulation around any spark producing operation and sufficient clearance around heat producing machines.

4) Install fire arrestors on all trucks and lifts; and flame arresting cans under dripping areas until the dripping can be stopped.

5) Ground all conveyors, belts and drive shafts.

6) Install automatic cut-offs, where possible, on equipment that may become overheated.

7) Post explicit smoking regulations.

8) Keep fire extinguishers handy, sprinkler heads clean and gravity tanks full.

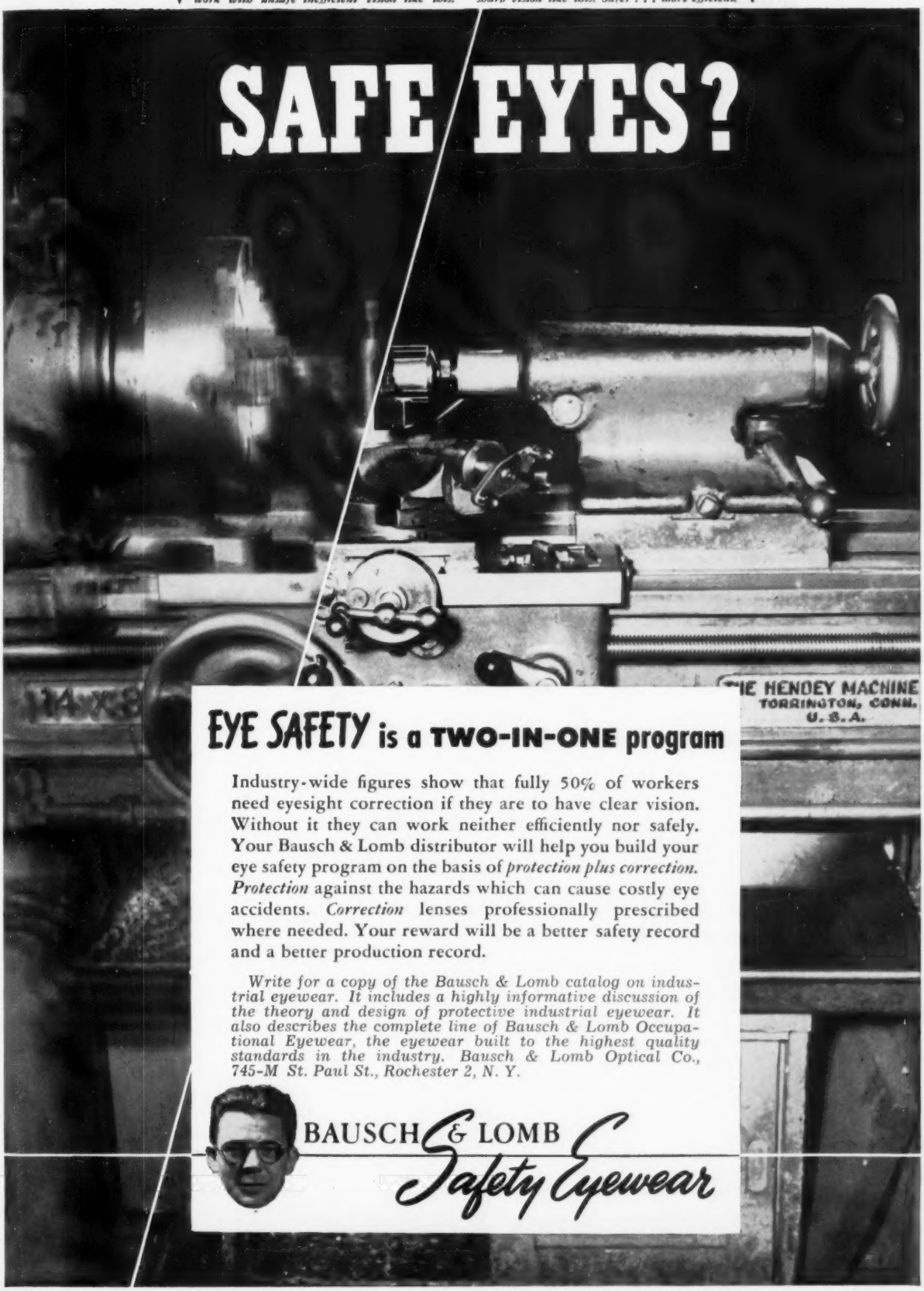
Remember that volatile vapors can best be controlled at their sources: proper containers and storage methods are therefore the first steps to take in preventing fires and explosions from this source. To furnish further protection, regular maintenance inspections and cleaning will deny fire feeding grounds.

DEX
....17
....10
Cover
....29
.... 6
....47
....36
....39
....48
....44
....25
.... 4
.... 3
....39
.... 7
nd 48
....31
Cover
....30
....11
....45
.... 9
....18
....45
....34
....35
....32
....43
.... 8
....46
....47
.... 2
....13
....44
....12
.... 1
ation
pera-
ound
all
sting
l the
s and
here
y be-
gula-
andy,
avity
s can
rces:
neth-
ps to
xplo-
rnish
nain-
will
ARDS

*Inadequate vision is often unsuspected until discovered and corrected. Be sure that none of your employees is being penalized by trying to work with unsafe inefficient vision like this.*

*Workers who are fitted with B&L Safety Eyewear, incorporating professionally-prescribed correction lenses for their jobs, have benefit of clear sharb vision like this. Safer . . . more efficient!*

# SAFE EYES?




## EYE SAFETY is a TWO-IN-ONE program

Industry-wide figures show that fully 50% of workers need eyesight correction if they are to have clear vision. Without it they can work neither efficiently nor safely. Your Bausch & Lomb distributor will help you build your eye safety program on the basis of *protection plus correction. Protection* against the hazards which can cause costly eye accidents. *Correction* lenses professionally prescribed where needed. Your reward will be a better safety record and a better production record.

*Write for a copy of the Bausch & Lomb catalog on industrial eyewear. It includes a highly informative discussion of the theory and design of protective industrial eyewear. It also describes the complete line of Bausch & Lomb Occupational Eyewear, the eyewear built to the highest quality standards in the industry. Bausch & Lomb Optical Co., 745-M St. Paul St., Rochester 2, N. Y.*



BAUSCH & LOMB *Safety Eyewear*

# You reach more than 20,000

# AUTHENTICATED BUYERS

## WITH THE "Certified Buying Power" PLAN

1. ACTIVE BUYERS
2. COMPLETE MARKET COVERAGE
3. PRODUCT INTEREST
4. INCREASED SALES
5. LOWERED SELLING COSTS

OCCUPATIONAL HAZARDS' "C. B. P." Plan identifies its more than 20,000 readers as authenticated, active BUYERS. The identity of each reader as a "CERTIFIED" buyer is validated by 31 selected safety equipment distributors located in key marketing areas. These distributors subscribe to OCCUPATIONAL HAZARDS for their active customers and best prospects. The distributors pay for each subscription. OCCUPATIONAL HAZARDS' more than 20,000 jobber-authenticated reader-buyers become more than just circulation . . . they represent the known potential national market for safety equipment. This makes OCCUPATIONAL HAZARDS the REAL sales link between the safety equipment manufacturer and his prospects.

OCCUPATIONAL HAZARDS' Controlled Circulation Audit guarantees QUANTITY distribution by industry and by individual. Under CCA the "CERTIFIED BUYING POWER" Plan guarantees that each reader also is an authenticated, active buyer. The safety equipment distributor, as subscriber for his own best customers, acts as the authenticating agent.

Thus, under "C. B. P." OCCUPATIONAL HAZARDS reaches more than just names, or titles, or companies . . . it reaches known, identified BUYERS. Here is the Number 1 buying audience to whom you must tell your story in '50.

Other "C. B. P." magazines published by the Industrial Publishing Company are FLOW, for the material handling equipment field, INDUSTRY and WELDING, for the welding equipment and supply field, APPLIED HYDRAULICS, for the hydraulic and air circuit engineering field, COMMERCIAL REFRIGERATION AND AIR CONDITIONING, for the air conditioning and refrigeration equipment field. Send for our booklet: "The 'C. B. P.' Plan . . . A new Dimension Added to Standard Magazine Audits."

H-83

**OCCUPATIONAL HAZARDS**

1240 ONTARIO STREET CLEVELAND 13, OHIO